Instant Tapeless Technology	**EVS Integration with Avid Transfer Manager**
Auteurs: Serge Comes	Object : Workflows, installation & User's Manual
Date 9/11/2007	Version 2.06

1 HISTORY

Version	Date	Author	Description
1.00	18/09/2006	Serge Comes	Creation
1.01	3/10/2006	Serge Comes	XBrowse/XStore limitation
2.00	10/04/2007	Serge Comes	DNxHD & Interplay integration
2.01	10/05/2007	Serge Comes	Update & corrections with XT package v8.04
2.02	4/06/2007	Serge Comes	Corrections
2.03	20/06/2007	Serge Comes	Release 1.2.2 (WG4) & 2.1.1 (Interplay Transfer v1.1.0)
2.04	05/07/2007	Serge Comes	Release 2.2.0 (Interplay Transfer v1.1.2) & load balancing with multi Transfer Manager
2.05	03/08/2007	Serge Comes	Update with Release Package Multicam 8.04.27
2.06	09/11/2007	Serge Comes	New EVS Avid Tools v1.3.3 & v2.3.3 for Package Multicam 8.04.33

2 TABLE OF CONTENT

1 HISTORY 1

2 TABLE OF CONTENT 1

3 OBJECTIVE OF THE DOCUMENT 3

4 MAIN FEATURES 4

5 VERSIONS COMPLIANCE MATRIX 5

5.1 AVID APIS 5
5.2 AVID SOFTWARE 5
5.3 EVS SOFTWARE 5

6 WORKFLOWS 7

6.1 AVID ARCHITECTURES 7
6.2 EVS TO AVID (INGEST) 8
6.2.1 CLIP "PUSH" STREAMING : IP DIRECTOR INTERFACE 9
6.2.2 CLIP "PUSH" VIA BACKUPED FILES : EVS AVID BROWSER OR XFILE INTERFACE 12
6.2.3 CLIP "PULL" VIA BACKUPED FILES ON MEDIA COMPOSER : EVS AVID BROWSER INTERFACE 17
6.2.4 LIVE FEED "STREAMING" TO AVID : XSTREAM INTERFACE 20
6.3 AVID TO EVS (SEND TO PLAYBACK) 22

7 PERFORMANCES 24

7.1 PUSH STREAMING FROM IP DIRECTOR 24
7.2 IMPORT OF BACKUPED FILES INTO AVID : PULL/PUSH WITH TM OR MANUAL IMPORT 24
7.2.1 PULL/PUSH WITH AVID TRANSFER MANAGER 24
7.2.2 IMX-D10 MXF OP-1A MANUAL IMPORT WITH MEDIA COMPOSER 25
7.3 XSTREAM 25
7.4 SEND TO PLAYBACK 25
7.5 GENERAL REMARKS: 25

8 INSTALLSHIELDS 27

8.1 EVS AVID TOOLS 27
8.2 AVID TRANSFER MANAGER OR ENGINE CLIENT 31

9 INSTALLATION AND CONFIGURATION 35

9.1 EVS IPDIRECTOR 36
9.2 AVID TRANSFER MANAGER SERVER 38
9.3 XFILE & XSTREAM 41
9.4 EVS AVID BROWSER 45
9.5 EVS PLAYBACK SERVER 49
9.6 MEDIA COMPOSER ADRENALINE CONFIGURATION 54
9.6.1 EVS TO AVID WORKFLOWS 54
9.6.2 EXPORT AVID TO EVS WORKFLOWS (EVS PLAYBACK SERVER) 54

10 KNOWN BUGS, LIMITATIONS & CONSTRAINTS 56

10.1 GENERALITIES 56
10.2 INGEST TO AVID 57
10.3 SEND TO PLAYBACK (TO EVS) 57
10.4 TIPS 58

11 WORKING WITH MULTIPLE TRANSFER MANAGER SERVERS 59

12 WORKING WITH AVID MEDIA MANAGER (WG 4) 61

12.1 CLIPS SEARCH AND IMPORT TO A BIN 61
12.2 TRANSFER MANAGER 62

13 WORKING WITH AVID INTERPLAY 64

13.1 AVID INTERPLAY ACCESS 65
13.2 AVID INTERPLAY ACCESS WINDOW IN MEDIA COMPOSER 65
13.3 AVID INTERPLAY ASSIST 66
13.4 AVID INTERPLAY TRANSFER STATUS 66

14 ACRONYMS 67

3 OBJECTIVE OF THE DOCUMENT

This document describes the installation, configuration and procedure to interface EVS XT server and Avid Transfer Manager.

Avid has developed several API to interface Third parties devices with Avid Transfer Manager and Avid Media Manager servers.

- Avid TransferManager Playback (DHM) SDK
- TransferManager Automation SDK
- Avid MediaManager Access SDK

EVS has developed applications (EVS Avid Tools) communicating with those API in order to :

- Import IMX D10 & Avid DNxHD® Codec content from an XT[2] server to Unity and Media Composer Adrenaline NLE. This can be performed through Xfile or a standalone application EVS Avid Browser
- Export and generate IMX D10 & Avid DNxHD® Codec content from a Media Composer Adrenaline NLE belonging to a Unity system. This can be performed through the standalone EVS Avid Playback application.
- Interface with WG 4 and Interplay (WG5) environments. Each system implements different APIs, resulting in separate installer for EVS Avid Tools.

4 MAIN FEATURES

- **2-way process** : import and export with Avid
- **SD & HD** with XT[2] only , not XT[1] !
- **EVS native format IMX D10** :
    - IMX 30/40/50 supported.
    - No decoding/encoding process. Native XT[2] quality is preserved.
- **EVS native format Avid DNxHD® Codec** :
    - Low level 8-bit : 120 Mbps (1080i50) & 145 Mbps (1080i59.94 & 720p59.94)
    - High level 8-bit : 220 Mbps (1080i59.94 only)
    - No decoding/encoding process. Native XT[2] quality is preserved.
- **Avid Transfer Manager Modes** : OMF & AAF (MXF) are supported. Note : Interplay only supports AAF/MXF, not OMF !
- **File formats** :
    - EVS MXF (IMX D10 & Avid DNxHD® Codec)
    - MXF OP1a (IMX-D10 only)
- **Audio** : 4 or 8 channels, 16-bit & 24-bit supported.
- **SuperMotion** (SD) supported. Audio is cancelled.
- **Metadata** : TC extraction only for the time being. Some metadata are also available as User's Properties in Interplay. Not yet finalized.
- **Formats** : 625i25 (PAL), 525i29.97 (NTSC), 1080i50, 1080i59.94 & 720p59.94

5 VERSIONS COMPLIANCE MATRIX

5.1 Avid APIs

Avid supplies 2 versions of APIs, one complaint with WG 4 (non Interplay) and one compliant with Interplay.

- WG 4 (non Interplay) :
  - DHM : Avid TM-DHM v2.9.1
  - TMAuto : Transfer Manager Automation API v2.9.1
- Interplay v1.1.2:
  - DHM : SDK_DHM_Interplay_1.0.7.20070629
  - TMAuto : SDK_TMAutoAPI_Interplay-20061130

5.2 Avid Software

Please contact Avid support for specific architecture and HW specifications.

- **WG 4 (non Interplay) : IMX D10 only**
  - Avid Transfer Manager Server & Client : v2.9.10, 2.9.12, 2.9.14 or 2.9.16.
  - Avid Unity MediaManager Server : v4.5+
  - Avid Media Composer Adrenaline : v2.2.6+ (v2.9 or 2.9.10 recommended).
  - Avid NewsCutter Adrenaline HD : v6.2.6+
- **Interplay v1.1.2 : IMX D10 & Avid DNxHD® Codec**
  - Avid Interplay v1.1.2. This include Avid Interplay Engine & Transfer Engine Server & Client.
  - Avid Media Composer (Adrenaline) : v2.7.2
  - Avid NewsCutter : v6.7.2

5.3 EVS Software

- ***EVS Avid Tools*** : EVS Avid tools dlls must be compiled with the specific Avid APIs.
  - **WG 4 (non Interplay)** : EVSAvid_Setup_1.2.0.exe
  - **Interplay v1.1.2 :** EVSAvid_Interplay_Setup_2.2.0.exe
  - ***XT Suite for XT[2] servers :***
    - **Release Package 8.03 (December 2006)**
      - Multicam v8.03.12
      - Xfile v1.09.02
      - XStream v1.01.02

        - XFile Lite v1.01.00
        - IP Director v3.22.20
        - MediaXchange v1.09.05
    - **Release Package 8.04 (May 2007)**
        - Multicam v8.04.19
        - Xfile v1.11.02 & v1.12.01 (June 2007)
        - XFile Lite v1.01.01
        - IP Director v4.15.91
        - MediaXchange v1.10.06
    - **Release Package 8.04.27 (August 2007)**
        - Multicam v8.04.27
        - Xfile v1.12.01
        - XFile Lite v1.01.01
        - IP Director v4.20.90
        - MediaXchange v1.10.06

- ***EVS Avid Tools*** : EVS Avid tools dlls must be compiled with the specific Avid APIs.
    - **WG 4 (non Interplay)** : EVSAvid_Setup_1.3.3.exe
    - **Interplay v1.1.2 :** EVSAvid_Interplay_Setup_2.3.3.exe
    - ***XT Suite for XT[2] servers :***
        - **Release Package 8.04.33 (November 2007)**
            - Multicam v8.04.33
            - Xfile v1.13.01
            - IP Director v4.31.80
            - MediaXchange v1.10.06

6 WORKFLOWS

Preliminary Remarks :

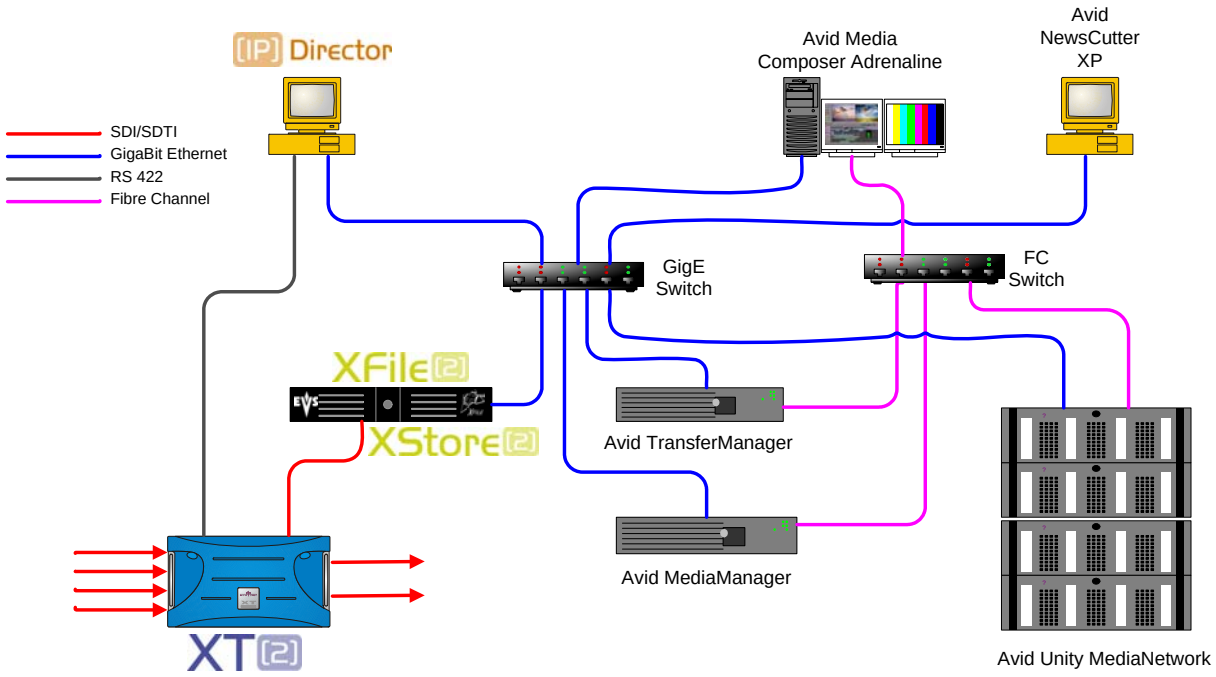
- Workflows are identical for both IMX D10 and Avid DNxHD® Codec, as well as for any bitrate flavours (IMX 30/40/50 or Avid DNxHD® Codec 120/145/220). Only performances are affected by the bitrates.
- Each workflows support up to 8 audios channels, either 16- or 24-bit audio, both ways.
- WG 4 and Interplay has no influence on the workflows.

6.1 Avid Architectures

Typically, there are 2 types of Avid architectures.

- **Media Composer Stations with Transfer Manager in standalone**. Content will be stored locally, on the local drives (System drive or SCSI packs) of the stations. In this case, the EVS browser is recommended instead of transfer via Xfile. In the latter, media will be available through Avid Media Tool, where the media are more difficult to find out especially in case of a large amount of content – no search tool is available.
    - **Note** : AAF/MXF mode generate a TC error with WG4. It is recommended to use OMF mode !
- **Avid Unity system** including a shared storage and specific devices for WG4 Media Manager & Transfer Manager or Interplay Engine Suite. Both EVS browser and Xfile can be used with this configuration. Avid Unity configurations :
    - **Avid Unity MediaNetwork :** FC storage for high throughput
    - **Avid ISIS :** Internet storage for large amount of simultaneous accesses to drives.
    - **Avid LanShare :** 3 RU all-in-one server and storage chassis with limited access (max 6 clients) and storage (4 or 8 TB).

A diagram of the EVS/Avid interoperability is shown below.



6.2 EVS to Avid (Ingest)

There are 4 ways to import an EVS clip into Avid system :

- Clip “Push” streaming from IP Director to Avid via Xfile : IP Director interface
- Clip “Push” via backuped files to Avid : EVS Avid Browser or XFile interface
- Clip “Pull” via backuped files to Avid on Avid Media Composer : EVS Avid Browser
- Live feed streaming to Avid : XStream interface

Workflow	XT content	Application	Transfer Initiator
Clip “Push” streaming	Clips	Studio network	IP Director Operator
Clip “Push” backup files	Clips as backuped files	- Studio network asynchronous - OB Van to Studio	Avid Content Manager on remote station
Clip “pull” backup files	Clips as backuped files	- Studio network asynchronous - OB Van to Studio	Avid Media Composer Editor
Live feed streaming	Train or live feed	Live Studio network	XStream Operator

6.2.1 Clip “Push” Streaming : IP Director interface

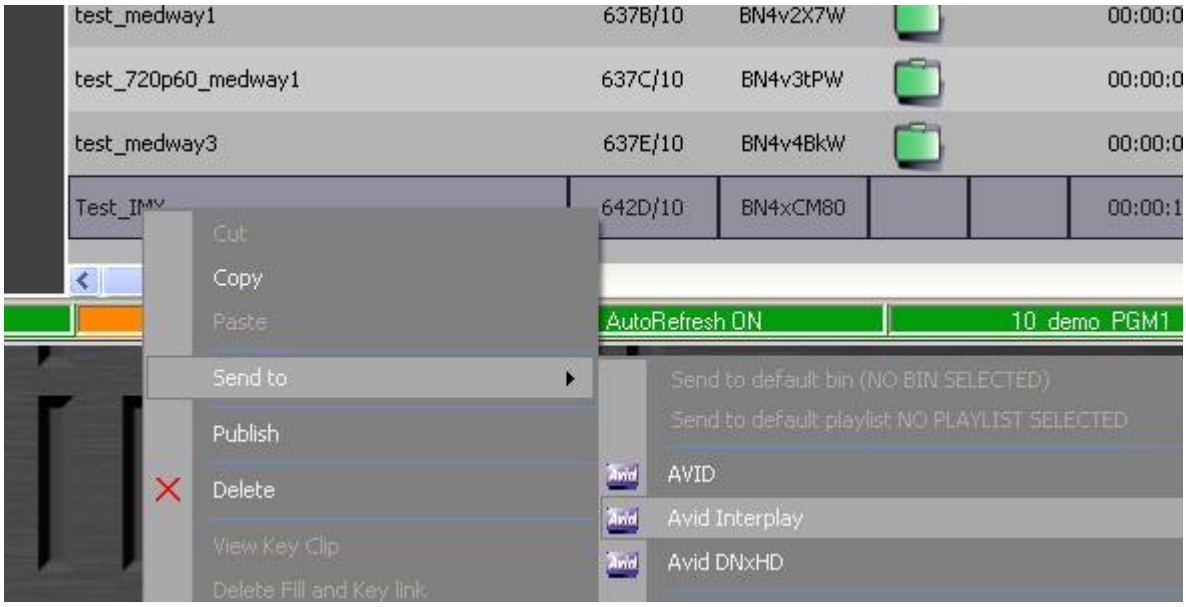
This workflow is based on Avid TMAuto API.

This is a one step process where the content form XT[2] server is directly streamed to the Avid storage via Xfile and Avid Transfer Manager Server. No temporary file is created on Xfile : the process is thus highly efficient. The XT[2] XNet via Xfile must be connected to the Avid system via high speed LAN (GigE connection).

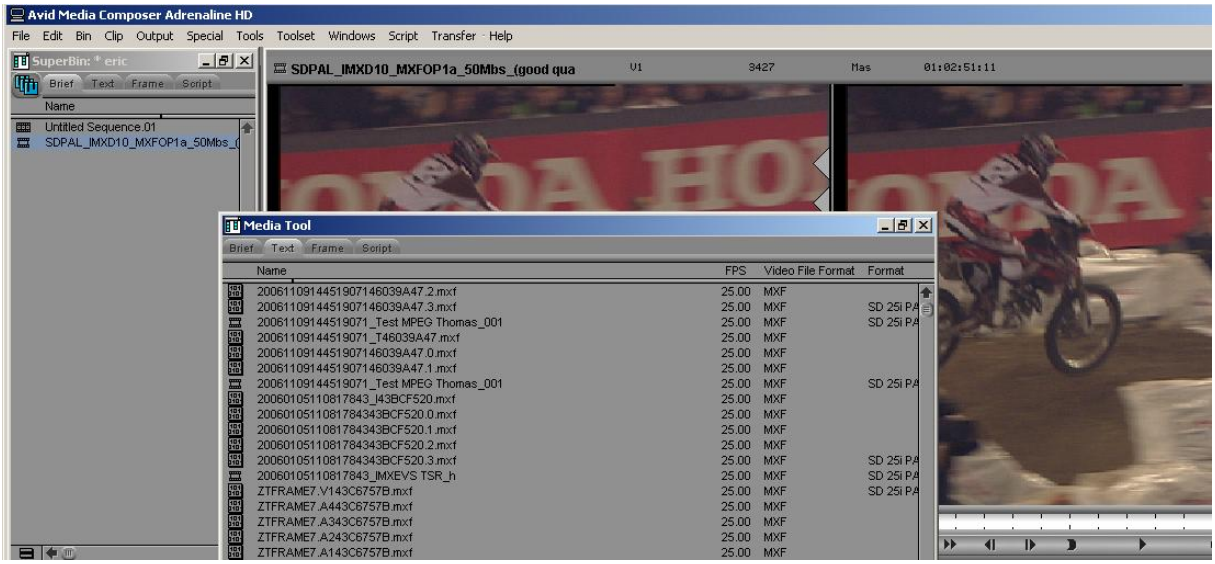
6.2.1.1 Workflow

- **Clip Creation with IP Director**
  - In & Out boundaries. Choose a clip name and Save
  - This clip can be browsed using the Database Explorer and previewed in a XT[2] playout channel

- **Clip export to Avid**
  - Selected one clip or a list of clips to be “exported to Avid”
  - Send those clips to an “Avid Export target”. Note : the target can also be pre-selected (sub-window “Send to”) when creating a clip: the transfer is then automatically started when saving the clip.
  - The content of the clip is streamed between Xfile and Avid Transfer Manager into the Avid storage in OMF or AAF/MXF format.



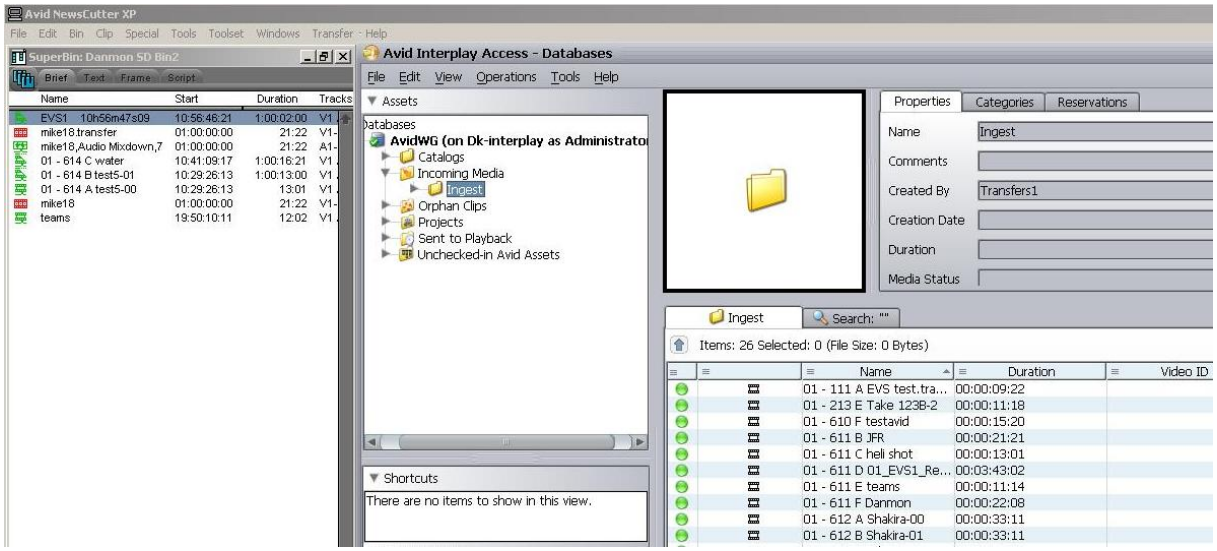
- **Clip Import in Media Composer bin**
  - **Option (a) : Standalone Avid Media Composer via Media Tool**
    - Search of the clip with Avid Media Composer Tools : Media Tool
    - Drag & drop of the clip into Media Composer project bin
    - Viewing and editing in Media Composer


Avid Media Composer Adrenaline HD
File Edit Bin Clip Output Special Tools Toolset Windows Script Transfer Help
SDPAL_IMXD10_MXFOP1a_50Mbs_(good qua
Media Tool
Brief Text Frame Script
Name FPS Video File Format Format

  - **Option (b) : Unity Avid Media Composer via Media Manager or Interplay Engine**
    - Search of the clip on Media Composer station with :
      - Media Manager browser (WG4)
      - Interplay Window (Interplay)

- Interplay Access or Assist Client (Interplay)

- Drag & drop of the clip into Media Composer project bin
- Viewing and editing in Media Composer


Avid NewsCutter XP
File Edit Bin Clip Special Tools Toolset Windows Transfer Help
SuperBin: Danmon SD Bin2
Brief Text Frame Script
Name Start Duration Tracks
EVS1 10h58m47s09 10:56:46:21 1:00:02:00 V1
mike18.transfer 01:00:00:00 21:22 V1
mike18,Audio Mixdown,7 01:00:00:00 21:22 A1
01 - 614 C water 10:41:09:17 1:00:16:21 V1
01 - 614 B test5-01 10:29:26:13 1:00:13:00 V1
01 - 614 A test5-00 10:29:26:13 13:01 V1
mike18 01:00:00:00 21:22 V1
teams 19:50:10:11 12:02 V1
Avid Interplay Access - Databases
File Edit View Operations Tools Help
Assets
Databases
AvidWG (on Dk-interplay as Administrator
Catalogs
Incoming Media
Ingest
Orphan Clips
Projects
Sent to Playback
Unchecked-in Avid Assets
Shortcuts
There are no items to show in this view.
Properties Categories Reservations
Name Ingest
Comments
Created By Transfers1
Creation Date
Duration
Media Status
Ingest Search: ""
Items: 26 Selected: 0 (File Size: 0 Bytes)
Name Duration Video ID
01 - 111 A EVS test.tra... 00:00:09:22
01 - 213 E Take 123B-2 00:00:11:18
01 - 610 F testavid 00:00:15:20
01 - 611 B JFR 00:00:21:21
01 - 611 C heli shot 00:00:13:01
01 - 611 D 01_EVS1_Re... 00:03:43:02
01 - 611 E teams 00:00:11:14
01 - 611 F Danmon 00:00:22:08
01 - 612 A Shakira-00 00:00:33:11
01 - 612 B Shakira-01 00:00:33:11

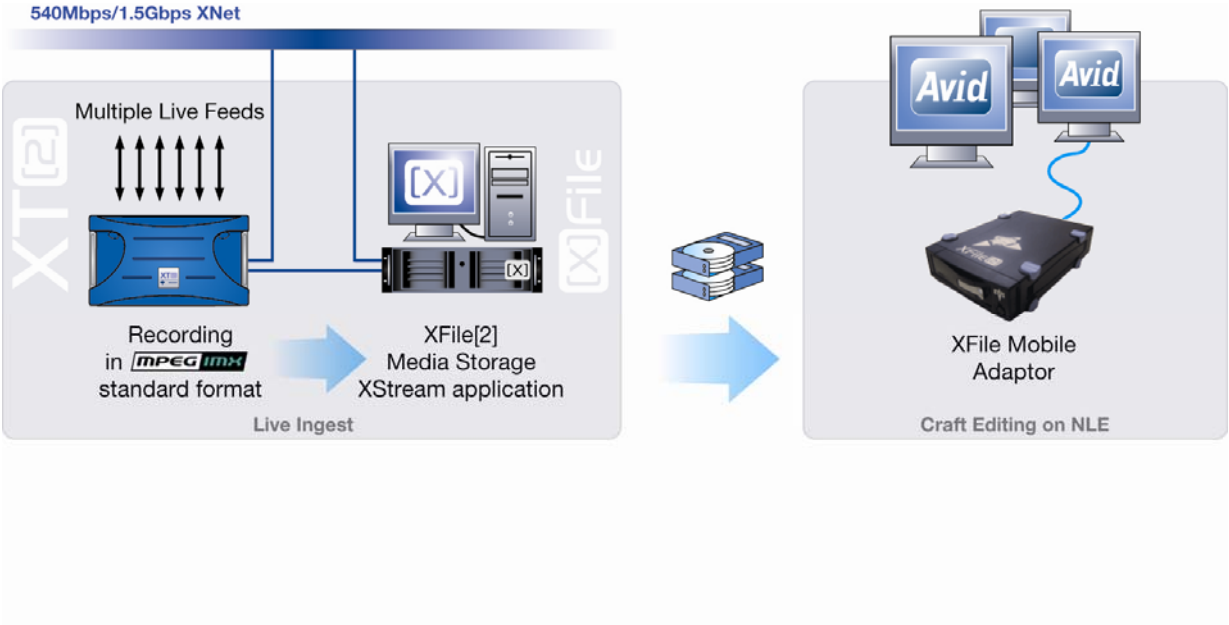
6.2.2 Clip "Push" via backuped files : EVS Avid Browser or Xfile interface

This workflow is based on Avid TMAuto API.

This is a 2 steps process : First a EVS MXF file is backuped on a Xfile storage. Second, this file is transferred to Avid storage.

This workflow is less efficient than the streaming but is dedicated to two typical applications :

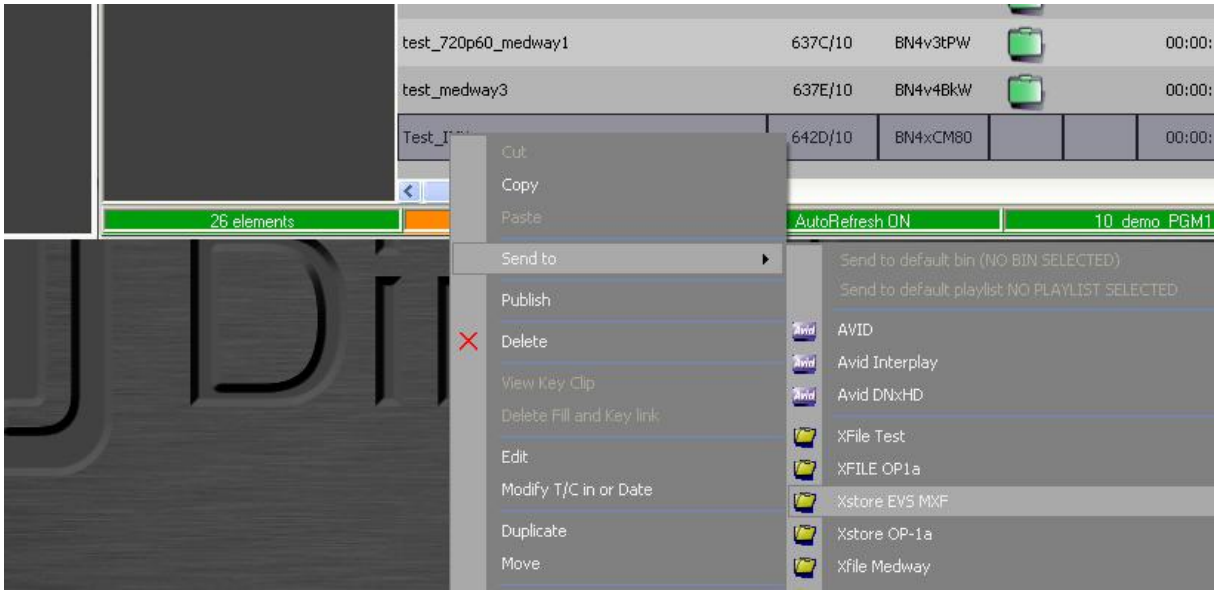
- The process of file backup and avid transfer is **asynchronous**. The operator first backup a list of clips. Later this operator or another one chooses which clips must be sent to Avid storage.
- **OB Van to Studio workflows** : The EVS operator creates backuped files on removable drives using Xfile or XStream in the OB Van. Those removable drives are sent to the studio (manually. They can either be plugged in a studio Xfile or XStore or merely attached to the Avid editing station via the USB adaptor for Removable drives. The Avid operator can then push the files to the Avid storage.



6.2.2.1 Workflow

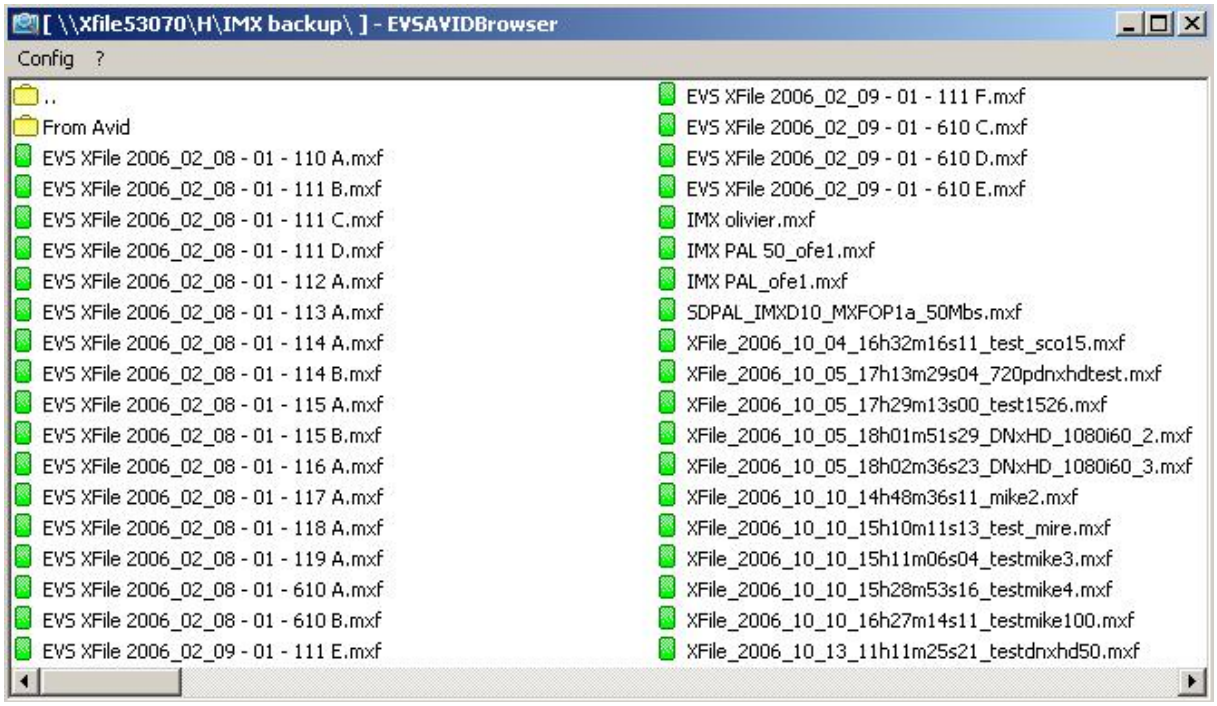
- **Clip Creation with IP Director or EVS remote**
    - In & Out boundaries. Choose a clip name and Save
    - This clip can be browsed using the Database Explorer and previewed in a XT[2] playout channel

- **Clip backup on XFile storage**
  - Selected one clip or a list of clips
  - Send those clips to an Xfile backup “target”. Note : the target can also be pre-selected (sub-window “Send to”) when creating a clip: the backup is then automatically started when saving the clip.
  - The clip is backuped in EVS MXF or MXF OP-1a (IMX D10 only) on Xfile storage.

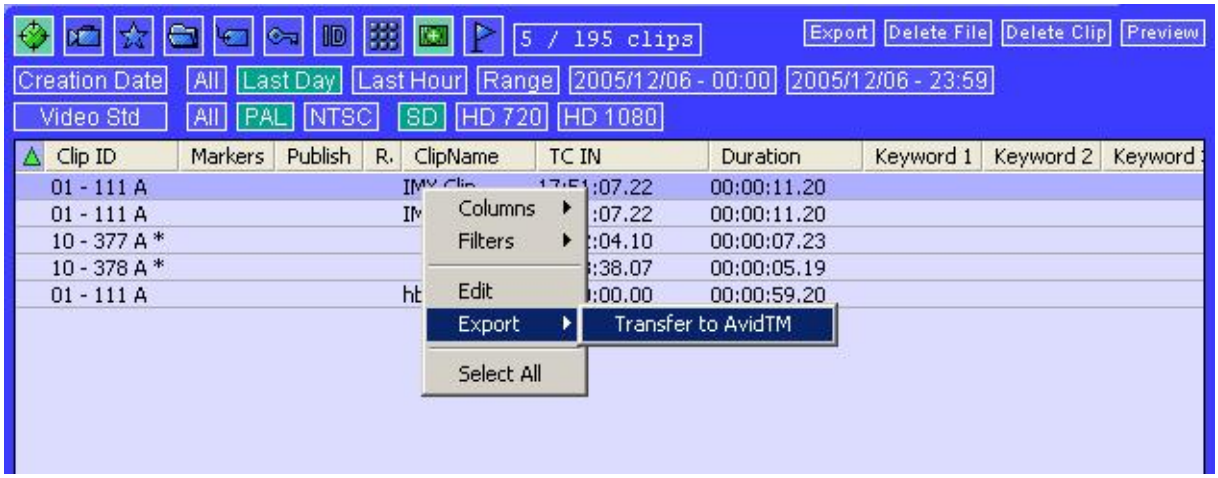


- **Transfer to Avid**
  - **Option (a) : EVS Avid Browser**
    - Select a file to be transferred to Avid using the EVS Avid browser

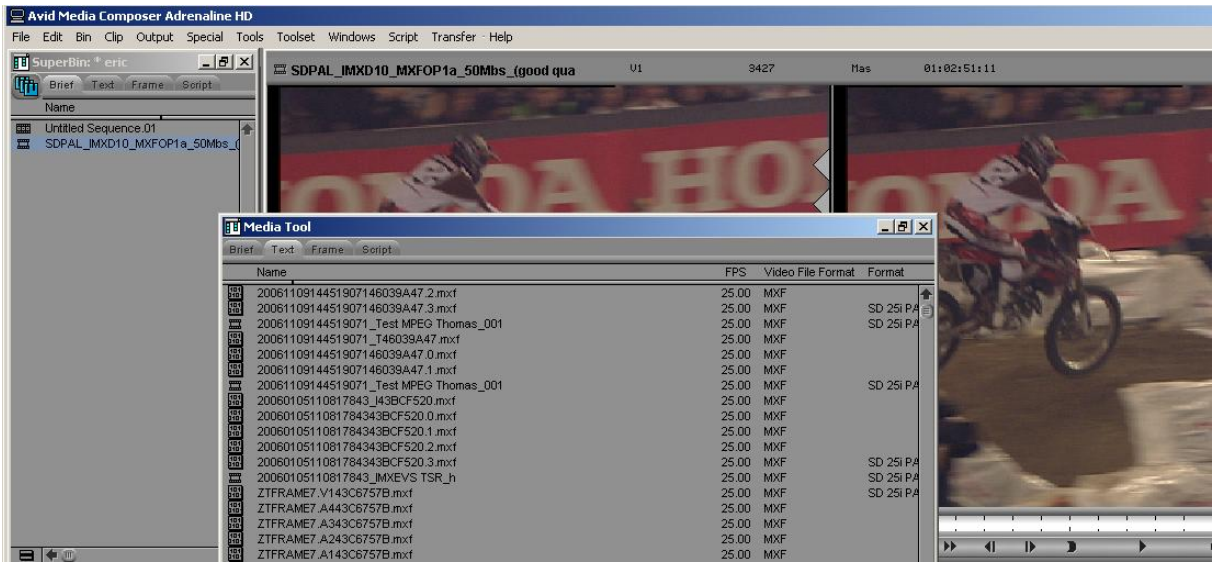
- Double click on the selected file
- Transfer to Avid storage (OMF or AFF/MXF format) starts via Avid Transfer Manager server. A progress and completion status is displayed.


[\\Xfile53070\H\IMX backup\ ] - EVSAVIDBrowser
Config ?
..
From Avid
EVS XFile 2006_02_08 - 01 - 110 A.mxf
EVS XFile 2006_02_08 - 01 - 111 B.mxf
EVS XFile 2006_02_08 - 01 - 111 C.mxf
EVS XFile 2006_02_08 - 01 - 111 D.mxf
EVS XFile 2006_02_08 - 01 - 112 A.mxf
EVS XFile 2006_02_08 - 01 - 113 A.mxf
EVS XFile 2006_02_08 - 01 - 114 A.mxf
EVS XFile 2006_02_08 - 01 - 114 B.mxf
EVS XFile 2006_02_08 - 01 - 115 A.mxf
EVS XFile 2006_02_08 - 01 - 115 B.mxf
EVS XFile 2006_02_08 - 01 - 116 A.mxf
EVS XFile 2006_02_08 - 01 - 117 A.mxf
EVS XFile 2006_02_08 - 01 - 118 A.mxf
EVS XFile 2006_02_08 - 01 - 119 A.mxf
EVS XFile 2006_02_08 - 01 - 610 A.mxf
EVS XFile 2006_02_08 - 01 - 610 B.mxf
EVS XFile 2006_02_09 - 01 - 111 E.mxf
EVS XFile 2006_02_09 - 01 - 111 F.mxf
EVS XFile 2006_02_09 - 01 - 610 C.mxf
EVS XFile 2006_02_09 - 01 - 610 D.mxf
EVS XFile 2006_02_09 - 01 - 610 E.mxf
IMX olivier.mxf
IMX PAL 50_ofe1.mxf
IMX PAL_ofe1.mxf
SDPAL_IMXD10_MXFOP1a_50Mbs.mxf
XFile_2006_10_04_16h32m16s11_test_sco15.mxf
XFile_2006_10_05_17h13m29s04_720pdnxhdtest.mxf
XFile_2006_10_05_17h29m13s00_test1526.mxf
XFile_2006_10_05_18h01m51s29_DNxHD_1080i60_2.mxf
XFile_2006_10_05_18h02m36s23_DNxHD_1080i60_3.mxf
XFile_2006_10_10_14h48m36s11_mike2.mxf
XFile_2006_10_10_15h10m11s13_test_mire.mxf
XFile_2006_10_10_15h11m06s04_testmike3.mxf
XFile_2006_10_10_15h28m53s16_testmike4.mxf
XFile_2006_10_10_16h27m14s11_testmike100.mxf
XFile_2006_10_13_11h11m25s21_testdnxhd50.mxf

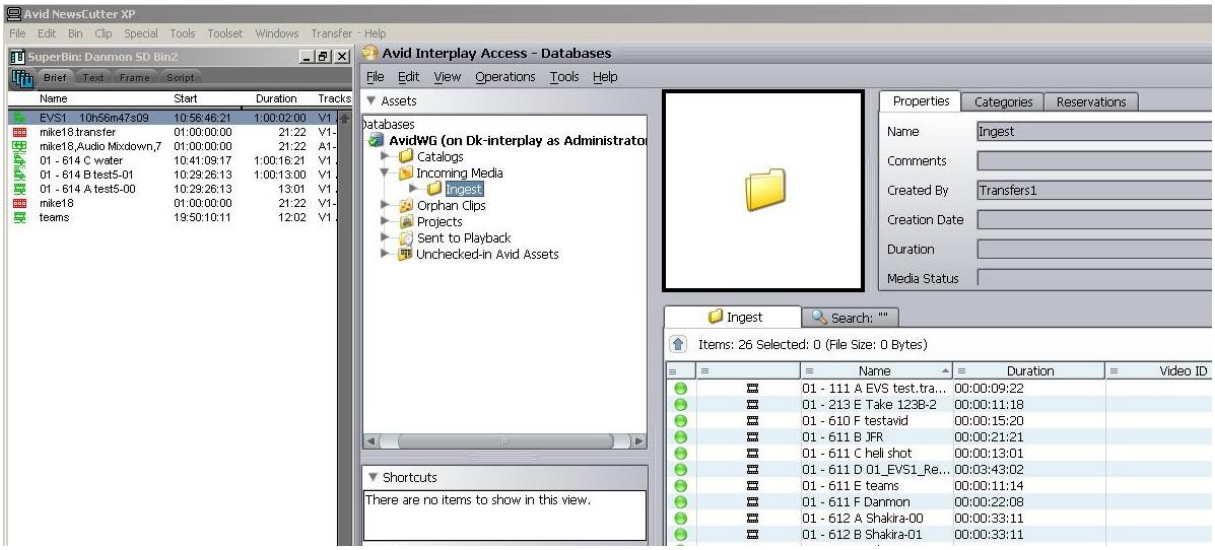
- **Option (b) : Xfile GUI**
  - Select a file to be transferred to Avid using the Xfile Maintenance GUI
  - Right click and choose “Export to Avid”
  - Transfer to Avid storage (OMF or AFF/MXF format) starts via Avid Transfer Manager server. A progress and completion status is displayed in Xfile GUI.



- **Clip Import in Media Composer bin**
  - **Option (a) : Standalone Avid Media Composer via Media Tool**
    - Search of the clip with Avid Media Composer Tools : Media Tool
    - Drag & drop of the clip into Media Composer project bin
    - Viewing and editing in Media Composer


Avid Media Composer Adrenaline HD
File Edit Bin Clip Output Special Tools Toolset Windows Script Transfer Help
SuperBin: * eric
Brief Text Frame Script
Name
Untitled Sequence.01
SDPAL_IMXD10_MXFOP1a_50Mbs_(good qua
Media Tool
Brief Text Frame Script
Name FPS Video File Format Format

- **Option (b) : Unity Avid Media Composer via Media Manager or Interplay Engine**
  - Search of the clip on Media Composer station with :
    - Media Manager browser (WG4)
    - Interplay Window (Interplay)
    - Interplay Access or Assist Client (Interplay)
  - Drag & drop of the clip into Media Composer project bin
  - Viewing and editing in Media Composer


Avid NewsCutter XP
File Edit Bin Clip Special Tools Toolset Windows Transfer Help
SuperBin: Danmon SD Bin2
Brief Text Frame Script
Name Start Duration Tracks
EVS1 10h56m47s09 10:56:46:21 1:00:02:00 V1
mike18.transfer 01:00:00:00 21:22 V1
mike18,Audio Mixdown,7 01:00:00:00 21:22 A1
01 - 614 C water 10:41:09:17 1:00:16:21 V1
01 - 614 B test5-01 10:29:26:13 1:00:13:00 V1
01 - 614 A test5-00 10:29:26:13 13:01 V1
mike18 01:00:00:00 21:22 V1
teams 19:50:10:11 12:02 V1
Avid Interplay Access - Databases
File Edit View Operations Tools Help
Assets
Databases
AvidWG (on Dk-interplay as Administrator
Catalogs
Incoming Media
Ingest
Orphan Clips
Projects
Sent to Playback
Unchecked-in Avid Assets
Shortcuts
There are no items to show in this view.
Properties Categories Reservations
Name Ingest
Comments
Created By Transfers1
Creation Date
Duration
Media Status
Ingest Search: ""
Items: 26 Selected: 0 (File Size: 0 Bytes)
Name Duration Video ID
01 - 111 A EVS test.tra... 00:00:09:22
01 - 213 E Take 123B-2 00:00:11:18
01 - 610 F testavid 00:00:15:20
01 - 611 B JFR 00:00:21:21
01 - 611 C heli shot 00:00:13:01
01 - 611 D 01_EVS1_Re... 00:03:43:02
01 - 611 E teams 00:00:11:14
01 - 611 F Danmon 00:00:22:08
01 - 612 A Shakira-00 00:00:33:11
01 - 612 B Shakira-01 00:00:33:11

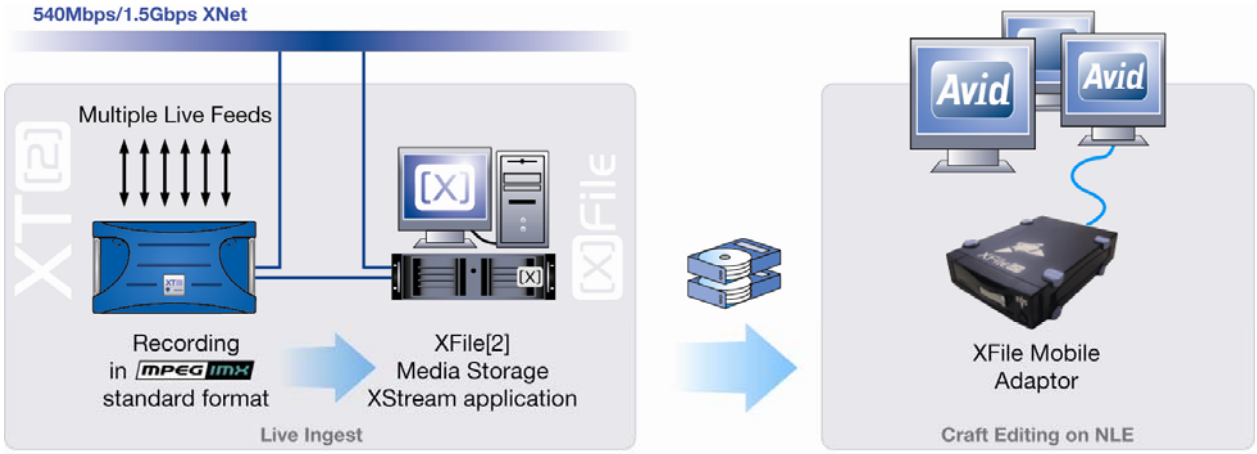
6.2.3 Clip "Pull" via backuped files on Media Composer : EVS Avid Browser interface

This workflow is based on Avid DHM.

This is a 2 steps process : First a EVS MXF file is backuped on a Xfile storage. Second, this file is pulled out from the Xfile to Avid storage.

This workflow is less efficient than the streaming but is dedicated to two typical applications :

- The process of file backup and avid transfer is asynchronous. The operator first backup a list of clips. Later this operator or another one chooses which clips must be sent to Avid storage.
- OB Van to Studio workflows : The EVS operator creates backuped files on removable drives using Xfile or XStream in the OB Van. Those removable drives are sent to the studio (manually. They can either be plugged in a studio Xfile or XStore or merely attached to the Avid editing station via the USB adaptor for Removable drives. The Avid operator can then push the files to the Avid storage.

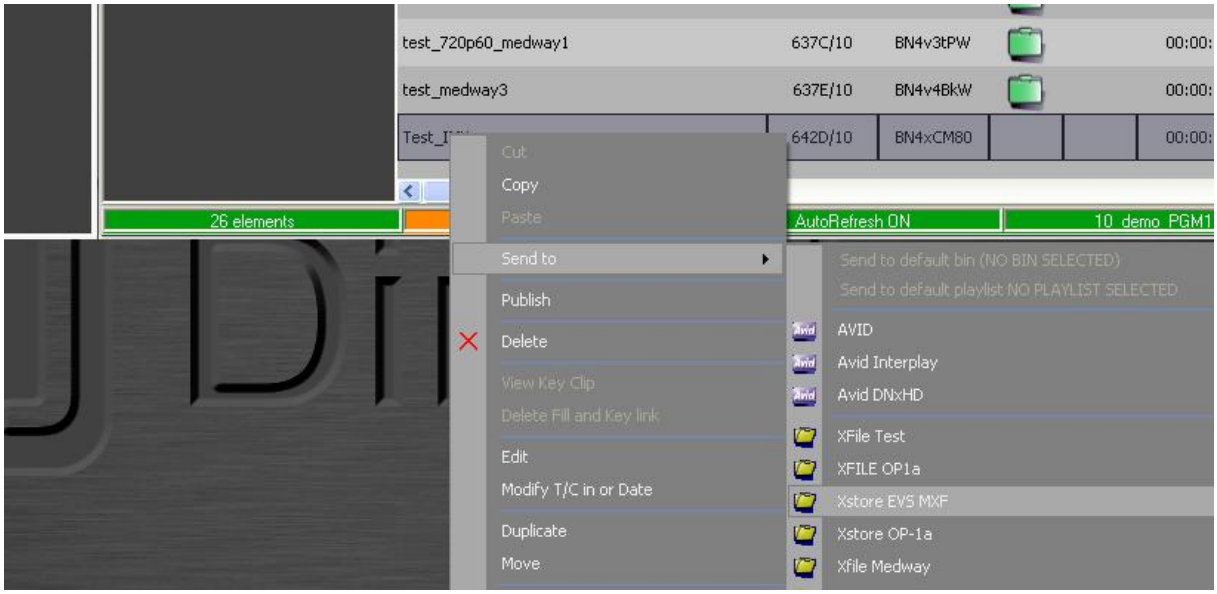


The main difference with the clip "push" via backuped file is that the transfer is initiated from the Avid editing station (i.e. Media Composer).

6.2.3.1 Workflow

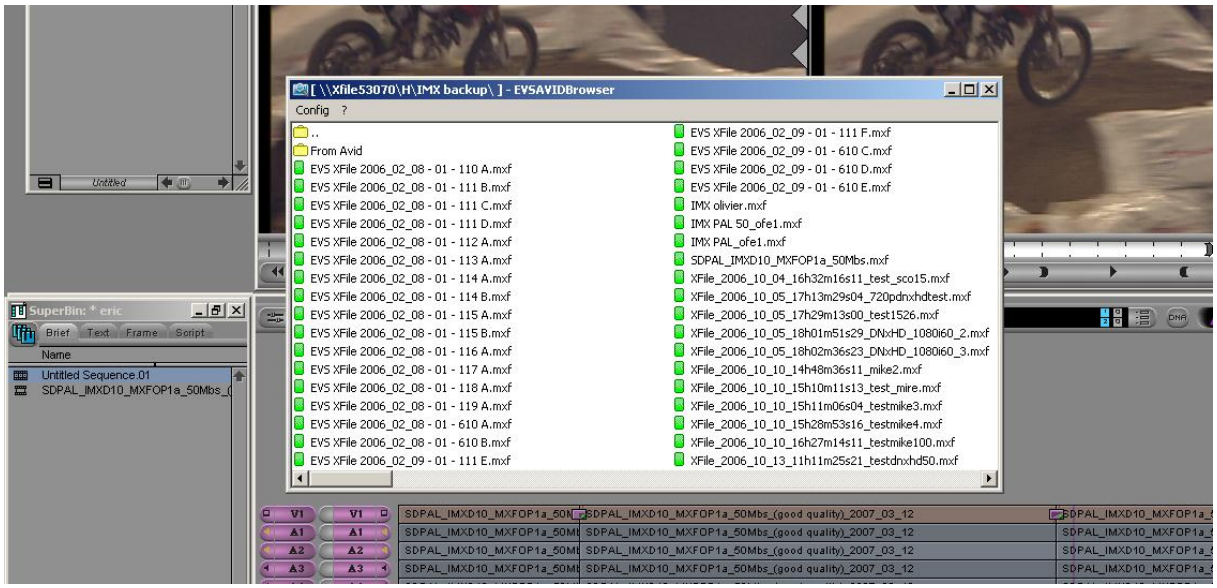
- **Clip Creation with IP Director or EVS remote**
    - In & Out boundaries. Choose a clip name and Save
    - This clip can be browsed using the Database Explorer and previewed in a XT[2] playout channel

- **Clip backup on XFile storage**
  - Selected one clip or a list of clips
  - Send those clips to an Xfile backup “target”. Note : the target can also be pre-selected (sub-window “Send to”) when creating a clip: the backup is then automatically started when saving the clip.
  - The clip is backuped in EVS MXF or MXF OP-1a (IMX D10 only) on Xfile storage.



- **Import into Media Composer Project bin**
  - Select a file to be transferred to Avid using the EVS Avid browser running on the Media Composer Editing station

- Drag & drop the file into the Media Composer bin
- Transfer to Avid storage (OMF or AFF/MXF format) starts via Avid Transfer Manager server. A progress and completion status is available using the Transfer Status in Media Composer “Transfer” menu.
- Viewing and editing in Media Composer


[\\Xfile53070\H\IMX backup\ ] - EVSAVIDBrowser
Config ?
..
From Avid
EVS XFile 2006_02_08 - 01 - 110 A.mxf
EVS XFile 2006_02_08 - 01 - 111 B.mxf
EVS XFile 2006_02_08 - 01 - 111 C.mxf
EVS XFile 2006_02_08 - 01 - 111 D.mxf
EVS XFile 2006_02_08 - 01 - 112 A.mxf
EVS XFile 2006_02_08 - 01 - 113 A.mxf
EVS XFile 2006_02_08 - 01 - 114 A.mxf
EVS XFile 2006_02_08 - 01 - 114 B.mxf
EVS XFile 2006_02_08 - 01 - 115 A.mxf
EVS XFile 2006_02_08 - 01 - 115 B.mxf
EVS XFile 2006_02_08 - 01 - 116 A.mxf
EVS XFile 2006_02_08 - 01 - 117 A.mxf
EVS XFile 2006_02_08 - 01 - 118 A.mxf
EVS XFile 2006_02_08 - 01 - 119 A.mxf
EVS XFile 2006_02_08 - 01 - 610 A.mxf
EVS XFile 2006_02_08 - 01 - 610 B.mxf
EVS XFile 2006_02_09 - 01 - 111 E.mxf
EVS XFile 2006_02_09 - 01 - 111 F.mxf
EVS XFile 2006_02_09 - 01 - 610 C.mxf
EVS XFile 2006_02_09 - 01 - 610 D.mxf
EVS XFile 2006_02_09 - 01 - 610 E.mxf
IMX olivier.mxf
IMX PAL 50_ofe1.mxf
IMX PAL_ofe1.mxf
SDPAL_IMXD10_MXFOP1a_50Mbs.mxf
XFile_2006_10_04_16h32m16s11_test_sco15.mxf
XFile_2006_10_05_17h13m29s04_720pdnxhdtest.mxf
XFile_2006_10_05_17h29m13s00_test1526.mxf
XFile_2006_10_05_18h01m51s29_DNxHD_1080i60_2.mxf
XFile_2006_10_05_18h02m36s23_DNxHD_1080i60_3.mxf
XFile_2006_10_10_14h48m36s11_mike2.mxf
XFile_2006_10_10_15h10m11s13_test_mire.mxf
XFile_2006_10_10_15h11m06s04_testmike3.mxf
XFile_2006_10_10_15h28m53s16_testmike4.mxf
XFile_2006_10_10_16h27m14s11_testmike100.mxf
XFile_2006_10_13_11h11m25s21_testdnxhd50.mxf
SuperBin: * eric
Brief
Text
Frame
Script
Name
Untitled Sequence.01
SDPAL_IMXD10_MXFOP1a_50Mbs_(good quality)_2007_03_12

6.2.4 Live feed “Streaming” to Avid : XStream interface

This workflow is based on Avid TMAuto API.

This is a one step process where the input feed from XT[2] server are directly streamed to the Avid storage via XStream and Avid Transfer Manager Server. No temporary file is created on Xfile : the process is thus highly efficient.

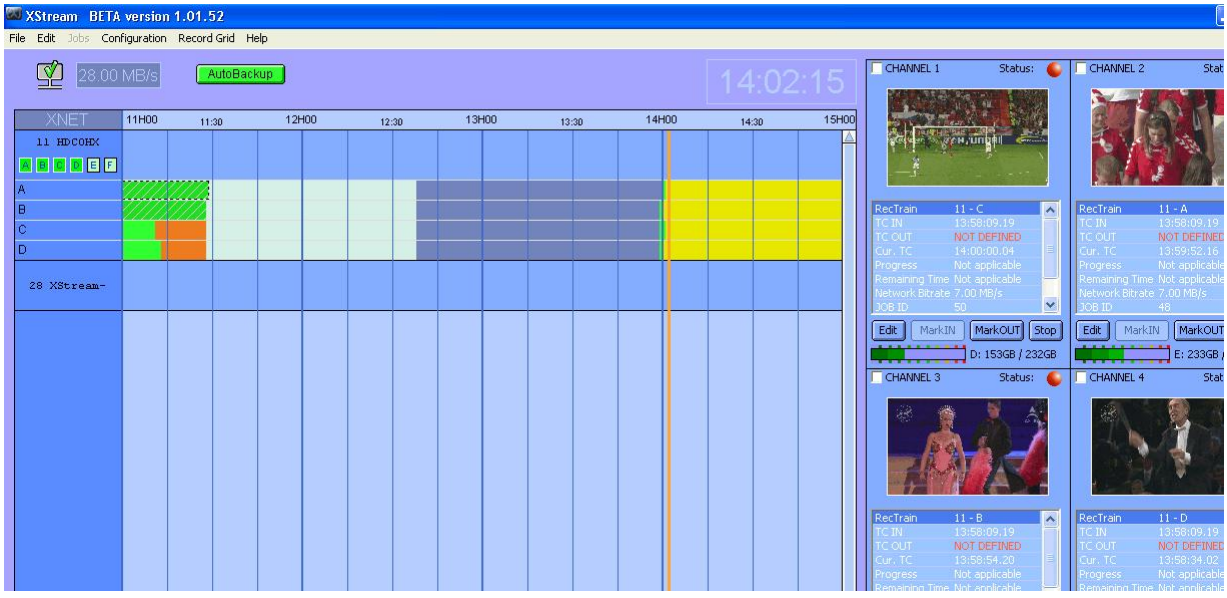
The XT[2] XNet via XStream must be connected to the Avid system via high speed LAN (GigE connection).

Avid Transfer must be setup in AAF/MXF format in order to edit the stream during record on Avid storage.

Media Manager or Interplay Engine must be used (no standalone Media Composer) in order to drag & drop live stream into Media Composer bin.

6.2.4.1 Workflow

- **XStream of XT[2] input feeds**
  - Start XStream application
  - Selection of the input feed to stream
  - Start streaming : the content of the clip is streamed between XStream and Avid Transfer Manager into the Avid storage in AAF/MXF format.



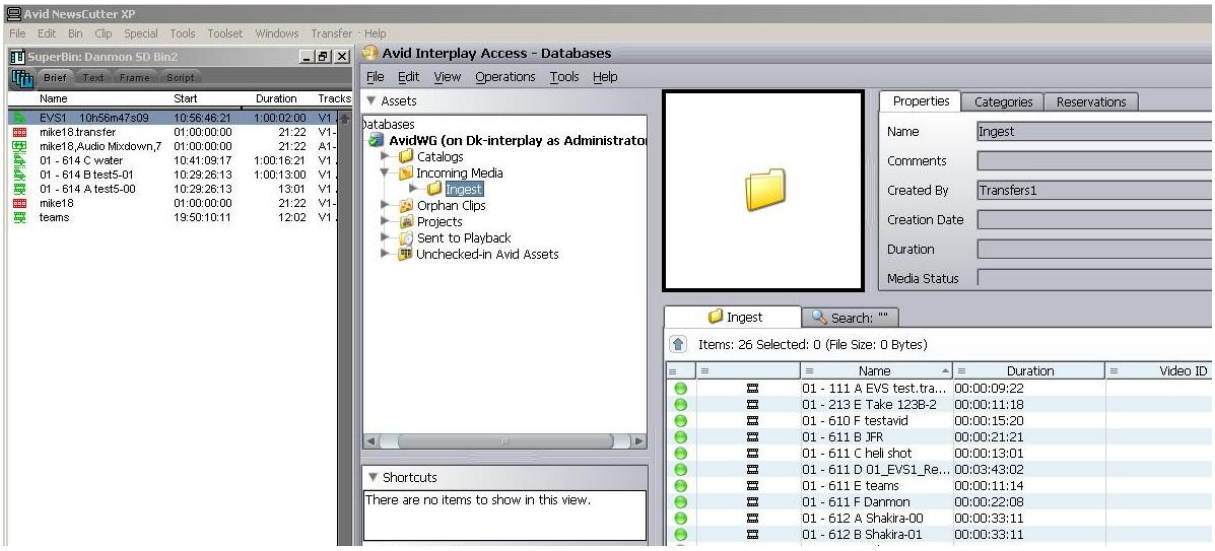
- **Clip Import in Media Composer bin via Media Manager or Interplay Engine**
  - Search of the clip on Media Composer station with :
    - Media Manager browser (WG4)
    - Interplay Window (Interplay)

- Interplay Access or Assist Client (Interplay)

o Drag & drop of the clip into Media Composer project bin

o Viewing and editing in Media Composer

o The delay between XT[2] input source and Avid edition is less than 1 minute.

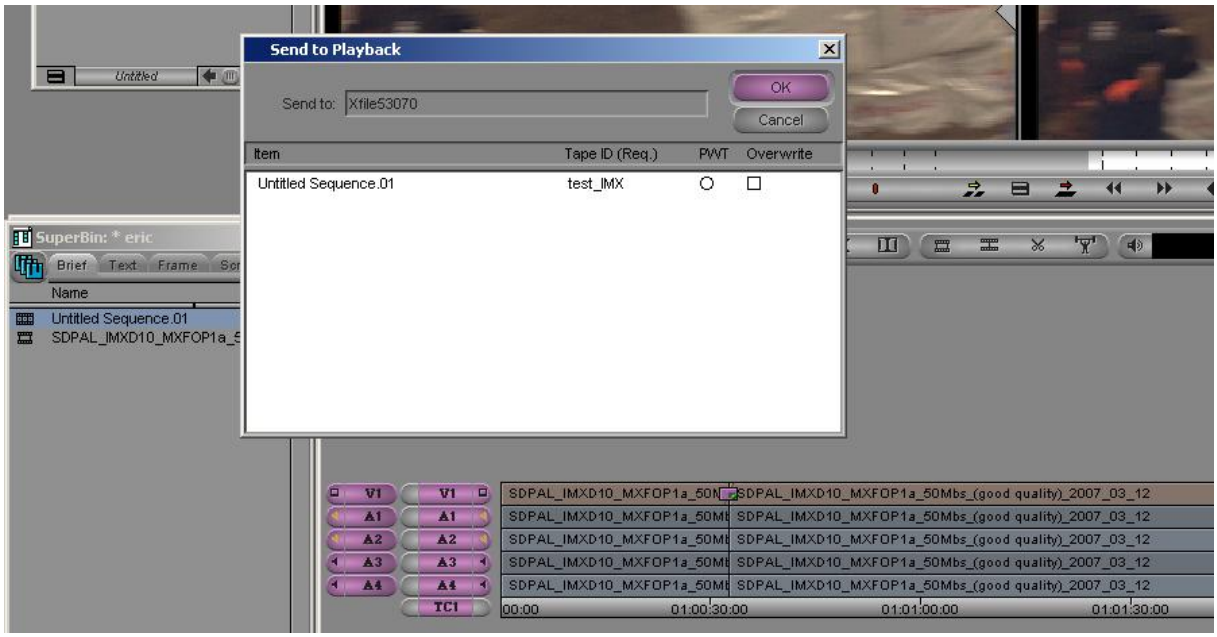

Avid NewsCutter XP
File Edit Bin Clip Special Tools Toolset Windows Transfer Help
SuperBin: Danmon SD Bin2
Brief Text Frame Script
Name Start Duration Tracks
EVS1 10h56m47s09 10:56:46:21 1:00:02:00 V1
mike18.transfer 01:00:00:00 21:22 V1
mike18,Audio Mixdown,7 01:00:00:00 21:22 A1
01 - 614 C water 10:41:09:17 1:00:16:21 V1
01 - 614 B test5-01 10:29:26:13 1:00:13:00 V1
01 - 614 A test5-00 10:29:26:13 13:01 V1
mike18 01:00:00:00 21:22 V1
teams 19:50:10:11 12:02 V1
Avid Interplay Access - Databases
File Edit View Operations Tools Help
Assets
Databases
AvidWG (on Dk-interplay as Administrator
Catalogs
Incoming Media
Ingest
Orphan Clips
Projects
Sent to Playback
Unchecked-in Avid Assets
Shortcuts
There are no items to show in this view.
Properties Categories Reservations
Name Ingest
Comments
Created By Transfers1
Creation Date
Duration
Media Status
Ingest Search: ""
Items: 26 Selected: 0 (File Size: 0 Bytes)
Name Duration Video ID
01 - 111 A EVS test.tra... 00:00:09:22
01 - 213 E Take 123B-2 00:00:11:18
01 - 610 F testavid 00:00:15:20
01 - 611 B JFR 00:00:21:21
01 - 611 C heli shot 00:00:13:01
01 - 611 D 01_EVS1_Re... 00:03:43:02
01 - 611 E teams 00:00:11:14
01 - 611 F Danmon 00:00:22:08
01 - 612 A Shakira-00 00:00:33:11
01 - 612 B Shakira-01 00:00:33:11

6.3 Avid to EVS (Send to Playback)

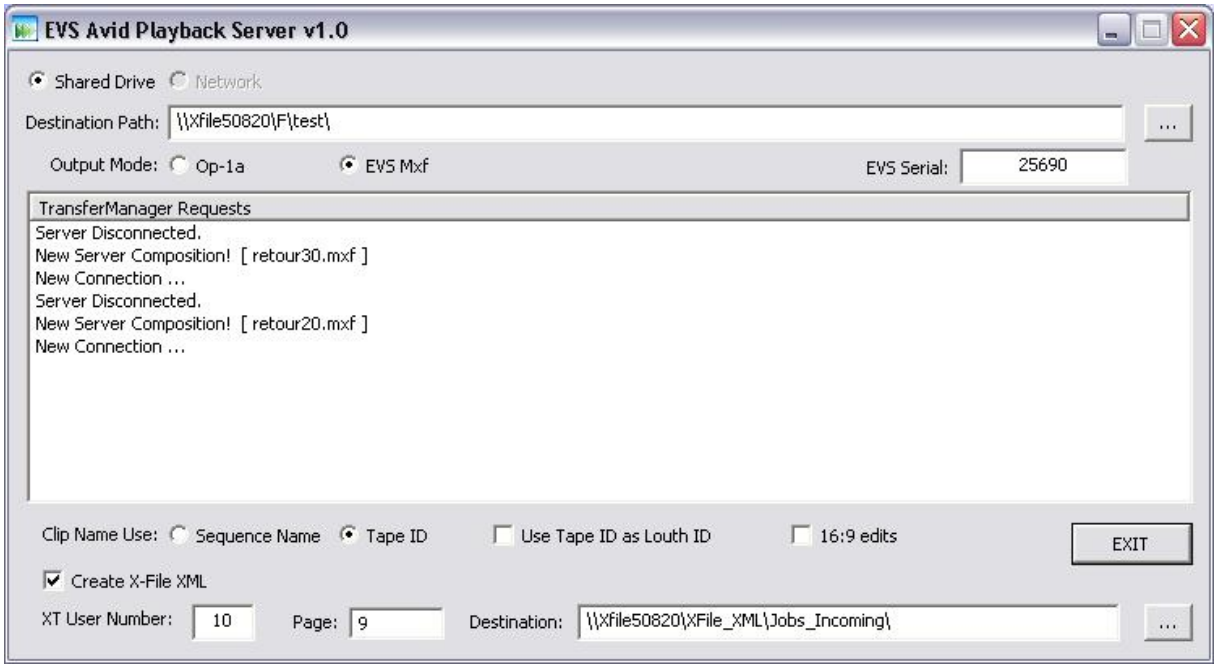
The Export workflow is controlled from the Media Composer editing station.

6.3.1.1 Workflow

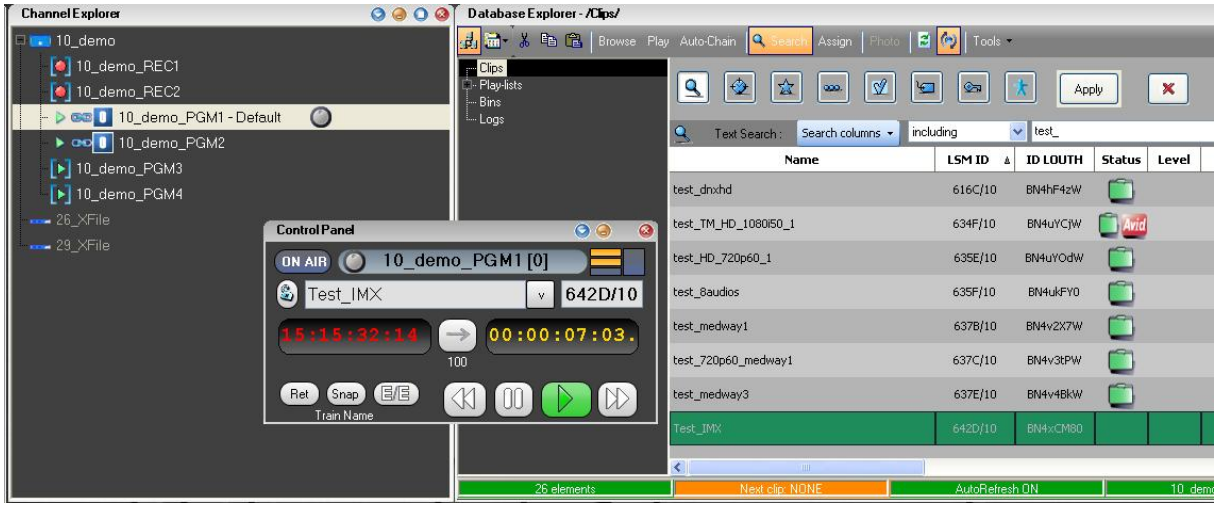
- **Send to Playback Preparation**
  - Select a sequence on Media Composer editing station
  - Select a Playback device in the “Send to Playback” menu
  - Specify a TAPE ID



- **Send to Playback Process**
  - Audio and Video Mixdown.
  - Streaming of Audio and video content by Transfer Manager server via EVS Playback server for target information. Generation of a EVS MXF or MXF OP-1a (for IMX D10 only) file on Xfile storage
  - The MXF file can be automatically restored on XT[2] server if connected. Otherwise the file can be manually restored on XT[2] via Xfile GUI.



- Browsing and Playout on XT[2] server via IP Director
    - Browsing of clip in the Database Explorer
    - Select a clip and drag & drop on a given XT[2] playout channel.



7 PERFORMANCES

The Tables below are an overview of performances reached for the transfers of clips from EVS XT[2] server to Avid systems, in both directions.

Figures represent the maximum throughput and the efficiency in Real Time (RT) for which values above 1 mean a transfer faster than RT.

For details of performances, please refer to Performances_EVS_Avid_v1.03.doc.

7.1 Push streaming from IP Director

The figures represent the whole process time from clip creation on XT[2] to clips available in Avid Media Composer for editing.

Performances	XFile[2]					XStore[2]				
	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxH D 145 720p60	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxH D 145 720p60
Throughput (MBytes/s)	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50
Efficiency (x RT faster)	Max 6	Max 6	Max 3	Max 2.5	Max 2.5	Max 6	Max 6	Max 3	Max 2.5	Max 2.5

7.2 Import of backuped files into Avid : Pull/push with TM or Manual Import

The figures only represents the import time into Avid : Backup time on Xfile is not taken into account.

Note that only IMX-D10 MXF OP-1a content can be imported into Avid via manual mode. Avid DNxHD® codec import is not supported for the time being.

7.2.1 Pull/Push with Avid Transfer Manager

Performances	XFile[2]					XStore[2]				
	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxH D 145 720p60	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxH D 145 720p60
Throughput (MBytes/s)	20 to 25	20 to 25	20 to 25	20 to 25	20 to 25	30 to 35	30 to 35	30 to 35	30 to 35	30 to 35
Efficiency (x RT faster)	Max 3	Max 3	Max 1.6	Max 1.3	Max 1.3	Max 4.5	Max 4.5	Max 2	Max 1.8	Max 1.8

7.2.2 IMX-D10 MXF OP-1a manual import with Media Composer

Performances	XFile[2]					XStore[2]				
	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxHD 145 720p60	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxHD 145 720p60
Throughput (MBytes/s)	20 to 25	20 to 25	N/A	N/A	N/A	30 to 35	30 to 35	N/A	N/A	N/A
Efficiency (x RT faster)	3	3	N/A	N/A	N/A	4.5	4.5	N/A	N/A	N/A

7.3 Xstream

The figures represent the maximum number of streams to be simultaneously transferred to Avid.

Those figures are preliminary results: tests must be finalized especially on the long term.

Performances	XFile[2]					XStore[2]				
	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxHD 145 720p60	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxHD 145 720p60
Throughput (MBytes/s)	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50	40 to 50
Maximun number of streams	4	4	2	2	2	4	4	2	2	2

7.4 Send to Playback

The figures represent the whole process time from the start of Send to Playback on Avid Media Composer to clips available on XT[2] server for playout.

Performances	XFile[2]					XStore[2]				
	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxHD 145 720p60	IMX 50 PAL	IMX 50 NTSC	DNxHD 120 1080i50	DNxHD 145 1080i60	DNxHD 145 720p60
Efficiency (x RT faster)	Max 1.5	Max 1.5	Max 0.6	Max 0.5	Max 0.5	Max 2	Max 2	Max 0.7	Max 0.6	Max 0.6

7.5 General Remarks:

- **These values are optimal**. The **initialisation** transition time to get sustained transfer rate by Transfer Manager Server before the transfer to Avid can vary between 2 to 10 seconds. **Transition time to get sustained transfer rate** also reduced the overall efficiency. Those processes influences results especially for the small file transfers.
- The results are also based on very **complex sequences** for which the encoder uses the maximum datarate available. For simpler sequences, effective bitrate can be lower resulting in less data to transfer. In this case, the efficiency can be improved.

- **The Push and pull transfers from Xfile[2] are versatile** because of the use of the removable disk which has not constant performances.
- For **file based transfers** (Push/pull from Xfile or Send to Playback) Xstore[2] instead of Xfile[2] device improves the transfer of files and so the performances too. As many write/read processes can be performed simultaneously (backup, transfer to/from Avid TM, restore) **XStore[2] is definitively recommended** for such workflows.
- The tests have been performed on **standalone Avid system** (Transfer Manager Server running on Media Composer station with a RAID storage) and **only one clip was transferred at once**. Large amount of transfers must be sized accordingly with the support of Avid architects (Unity storage design, number of Transfer Manager servers, etc.).
- Interplay Engine and WG4 Media Manager allows for starting editing during transfer. This feature has not been considered in those performances tests.

8 INSTALLSHIELDS

The interface with Avid involves 2 installshields :

- **EVS Avid Tools** is an EVS installshield for EVS & Avid dlls, as well as some EVS applications
- **Transfer Manager Client** is an Avid installshield mandatory to communicate with Transfer Manager Server.

This section 7 explains how to install both installshields.

Next section 9 explains which installshield and options to install on each device considered by the workflow. Configuration of applications and .ini files are also mentioned.

8.1 EVS Avid Tools

During an import or export with Avid Transfer Manager Server, EVS applications like EVS Avid Browser, EVS Avid Playback Server or XFile will tell Avid TM Server to communicate with EVS dlls to perform IMX or Avid DNxHD® Codec file demultiplexing and data (audio/video tracks) transfer (import) or generation of an IMX file from data received from TM Server (export). This means specific dlls and application must be installed. EVS Avid Tools setup is devoted to this task.

Reminder : EVS Avid tools dlls must be compiled with the specific Avid APIs.

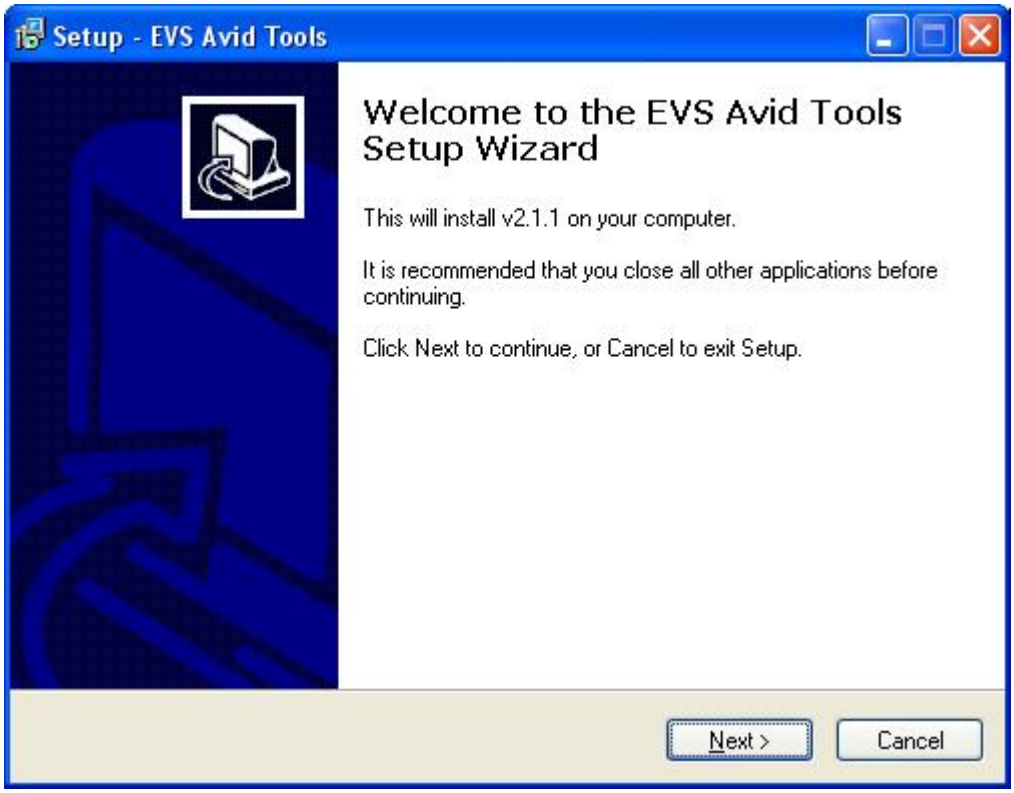
- **WG 4 (non Interplay)** : EVSAvid_Setup_1.3.3.exe
- **Interplay v1.1** : EVSAvid_Interplay_Setup_2.3.3.exe

List of items installed by each option :

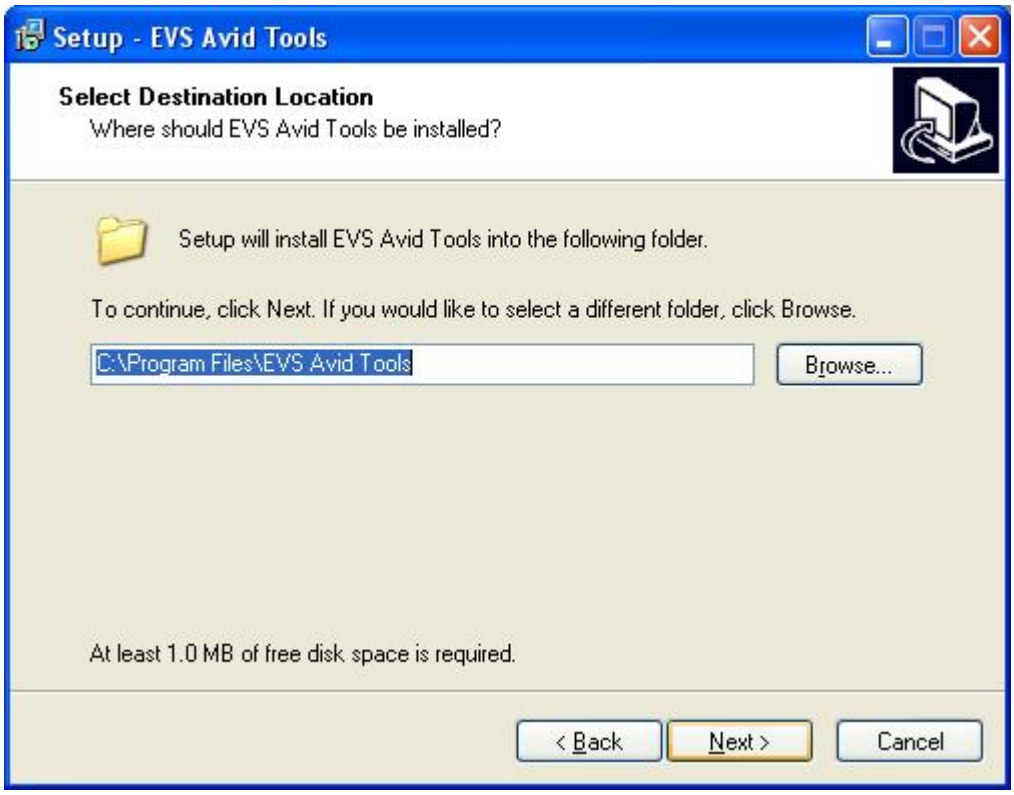
File Name	From	EVS TM Server DLLs	Browser	PlayBack Server	TM Client DLLs	
EVSSetupVC7.dll	EVS	x	x		x	Dll to create Avid Proxy MOB from XML data
EVSReceiverVC7.dll	EVS	x				Dll to ingest Audio/video data in Transfer Manager
EVS_DHMVC7.dll	EVS	x				Dll to write Audio/video data generated by Transfer Manager (Playback)
EVSTMAuto.dll	EVS		x		x	Dll to control Transfer Manager in Auto mode
EVSAvidBrowser2.exe	EVS		x			EVS application to browse files
EVSAPBSrv.exe	EVS			X		EVS Playback server application (setting & monitoring)
AvidTMAutoAPIVC7.dll	Avid		x	X	x	Avid dll to communicate with Transfer Manager in Auto mode

TMClient.ini	Avid/EVS		x		x	ini file to specify the Transfer Manager device
IMX_System.mxf	EVS	x				MXF template file
IMX_Header.mxf	EVS	x				MXF template file
IMX_Footer.mxf	EVS	x				MXF template file
Adding EVS Avid Tools to path	EVS	x	x	X		Definition of the installation path
Adding Port configuration in etc	EVS			X		Addition of ports configurations used by Playback Server (Services files)

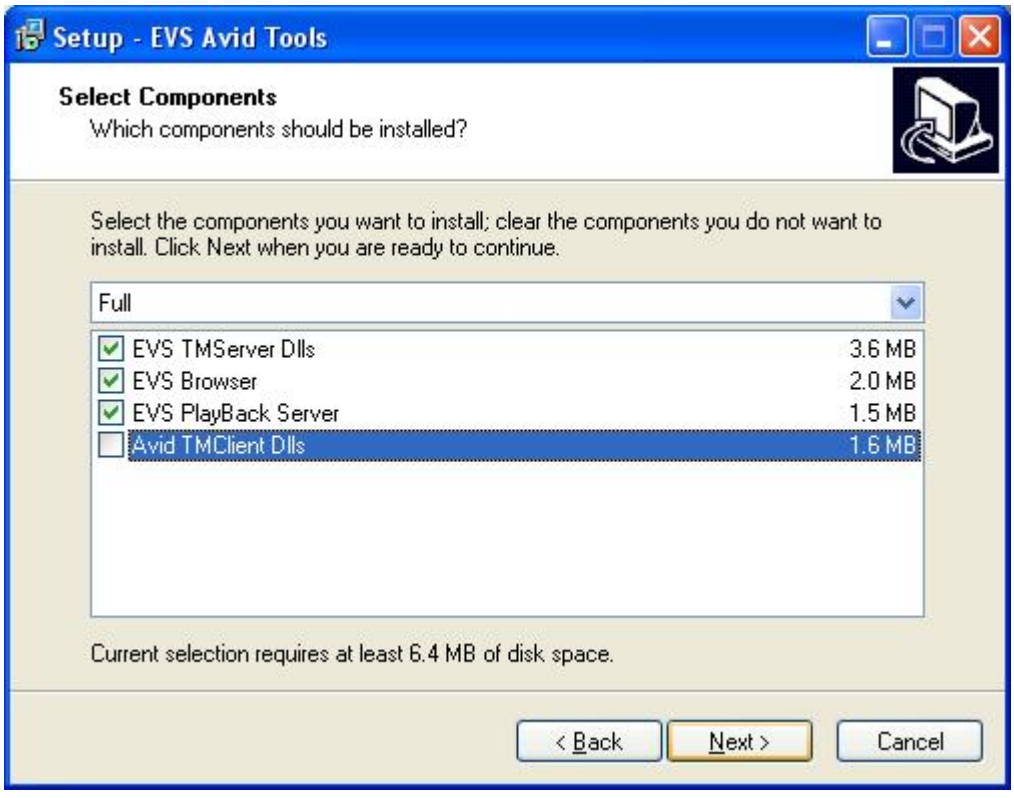
Launch EVSAvid_Setup_XX.exe


Setup - EVS Avid Tools
Welcome to the EVS Avid Tools Setup Wizard
This will install v2.1.1 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

Click NEXT


Setup - EVS Avid Tools
Select Destination Location
Where should EVS Avid Tools be installed?
Setup will install EVS Avid Tools into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\EVS Avid Tools
Browse...
At least 1.0 MB of free disk space is required.
< Back
Next >
Cancel

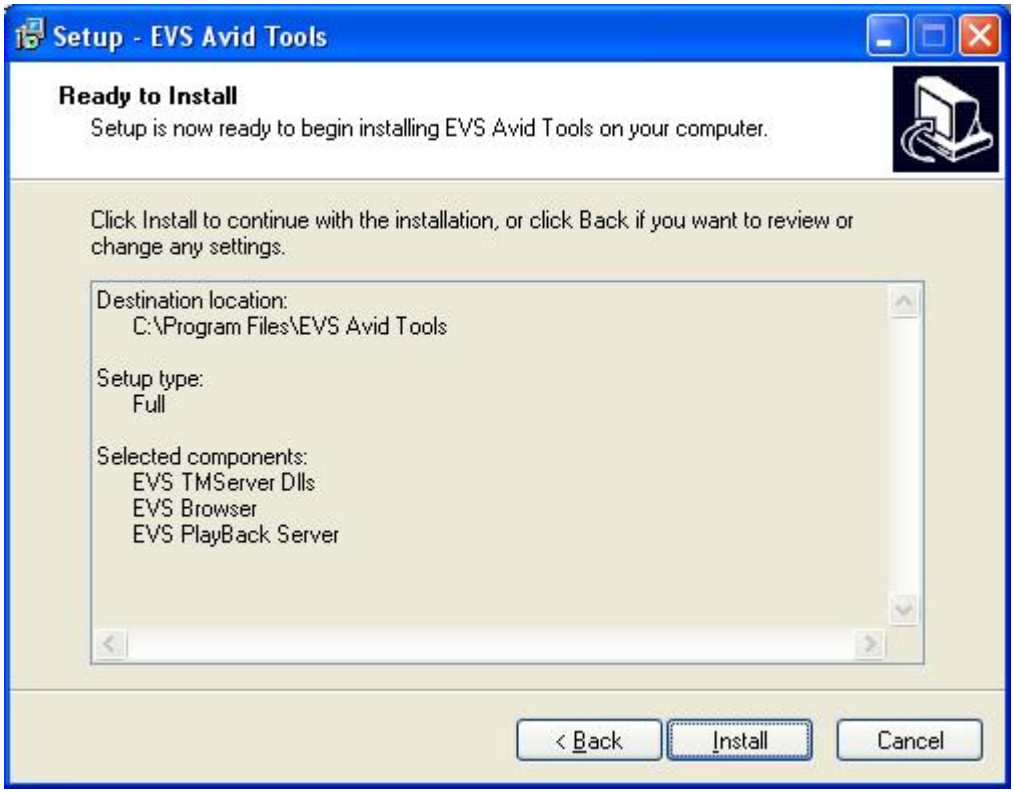
Select an directory and click NEXT


Setup - EVS Avid Tools
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full
EVS TMServer Dlls 3.6 MB
EVS Browser 2.0 MB
EVS PlayBack Server 1.5 MB
Avid TMClient Dlls 1.6 MB
Current selection requires at least 6.4 MB of disk space.
< Back
Next >
Cancel

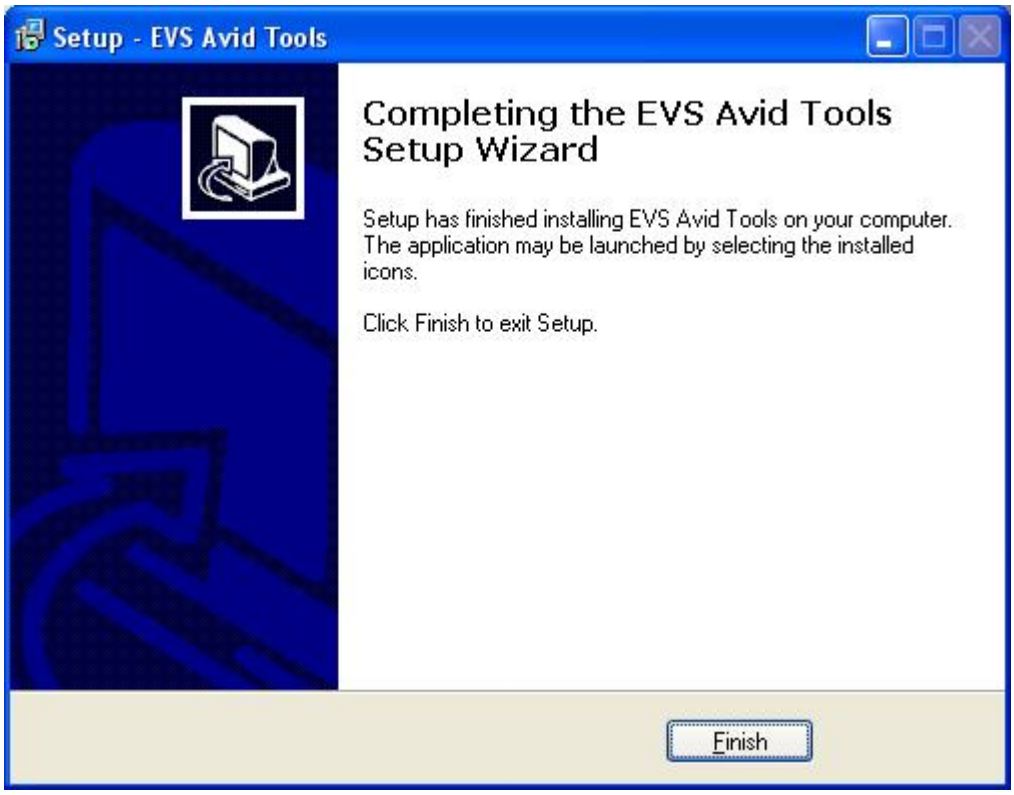
You must now select the dlls and applications to install following the project.

Each selected item will install the items defined above. See section 9 for typical installations.

Click NEXT


Setup - EVS Avid Tools
Ready to Install
Setup is now ready to begin installing EVS Avid Tools on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Program Files\EVS Avid Tools
Setup type:
Full
Selected components:
EVS TMServer Dlls
EVS Browser
EVS PlayBack Server
< Back
Install
Cancel

Click INSTALL


Setup - EVS Avid Tools
Completing the EVS Avid Tools Setup Wizard
Setup has finished installing EVS Avid Tools on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
Finish

The setup is finished.

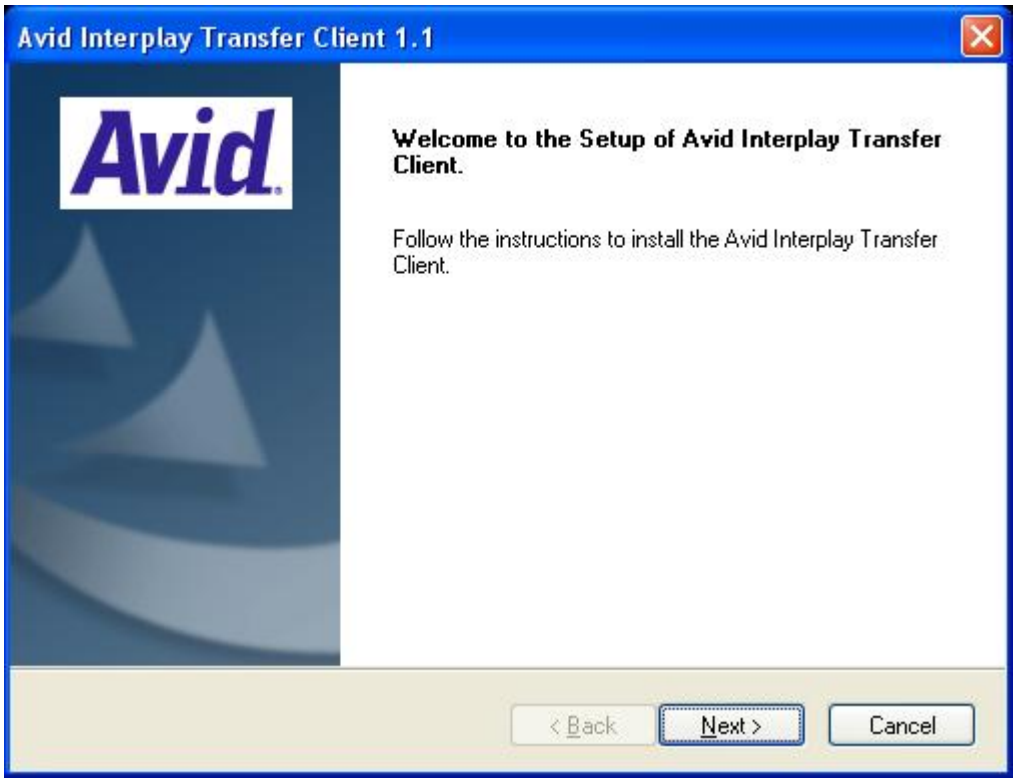
8.2 Avid Transfer Manager or Engine Client

Once any application will communicate with Avid Transfer Manager Server, the Transfer Manager Client must be installed on this workstations running the application. Applications like Avid Media Composer or News Cutter, EVS Avid Browser or Xfile are concerned.

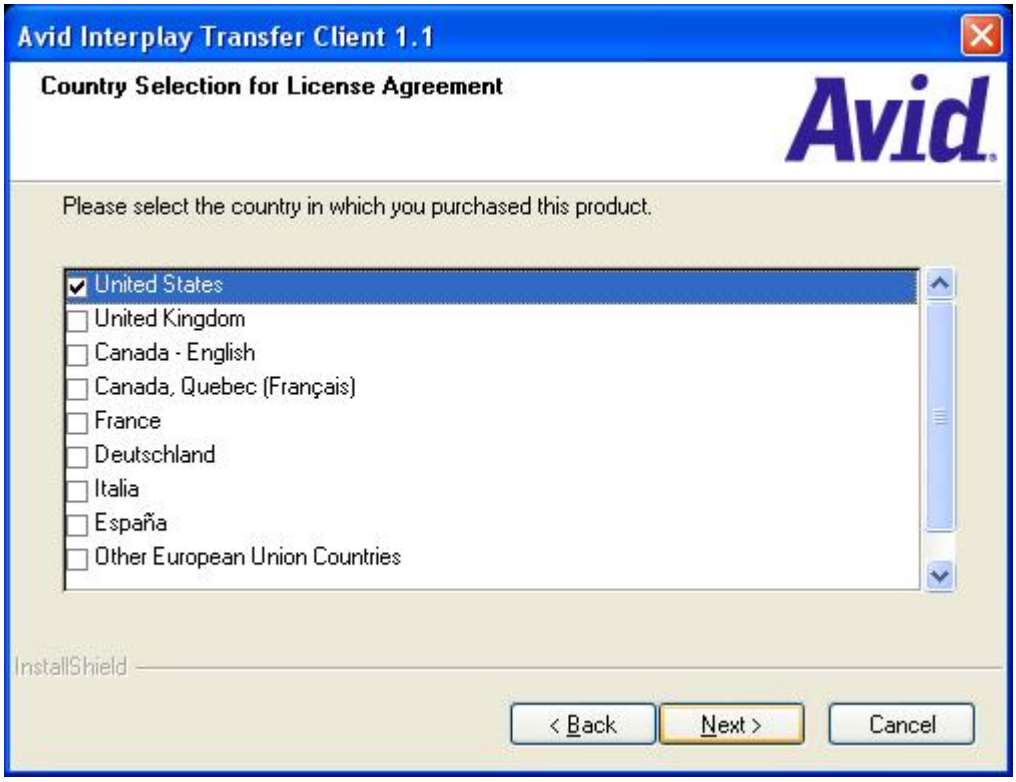
The version of the Avid Transfer Manager Client must be compliant to the relative version of transfer Manager Server.

So the Transfer Manager client will be installed separately from the EVS Avid tools.

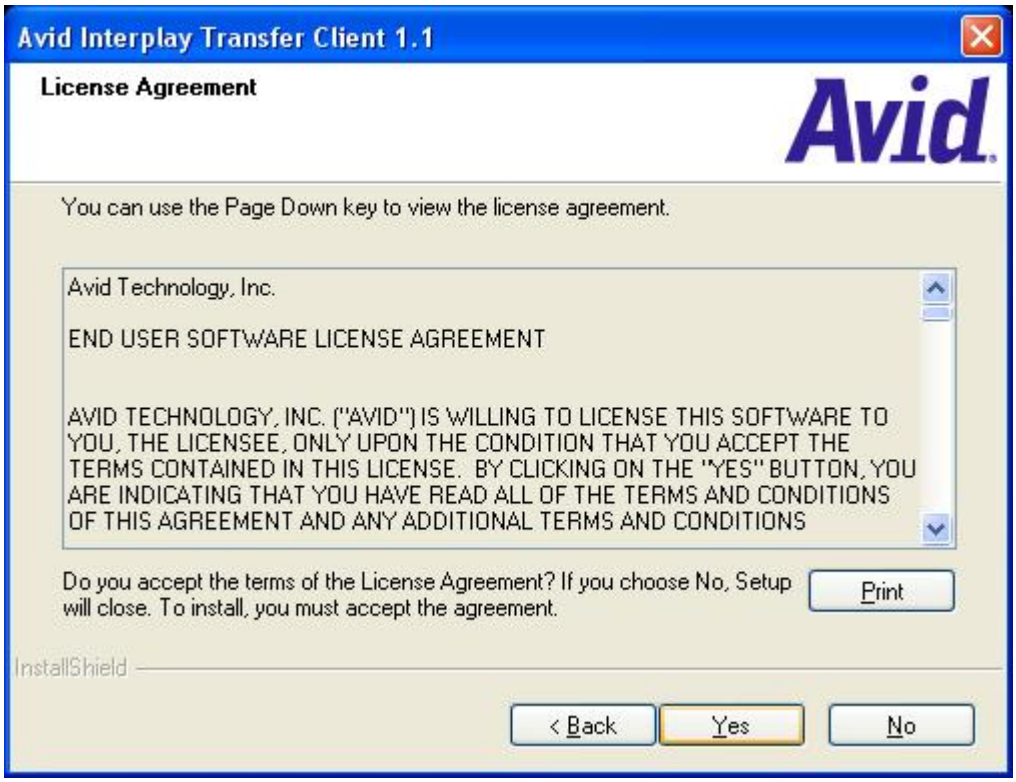
Launch Transfer Manager Client setup from Avid install disks.


Avid Interplay Transfer Client 1.1
Avid
Welcome to the Setup of Avid Interplay Transfer Client.
Follow the instructions to install the Avid Interplay Transfer Client.
< Back
Next >
Cancel

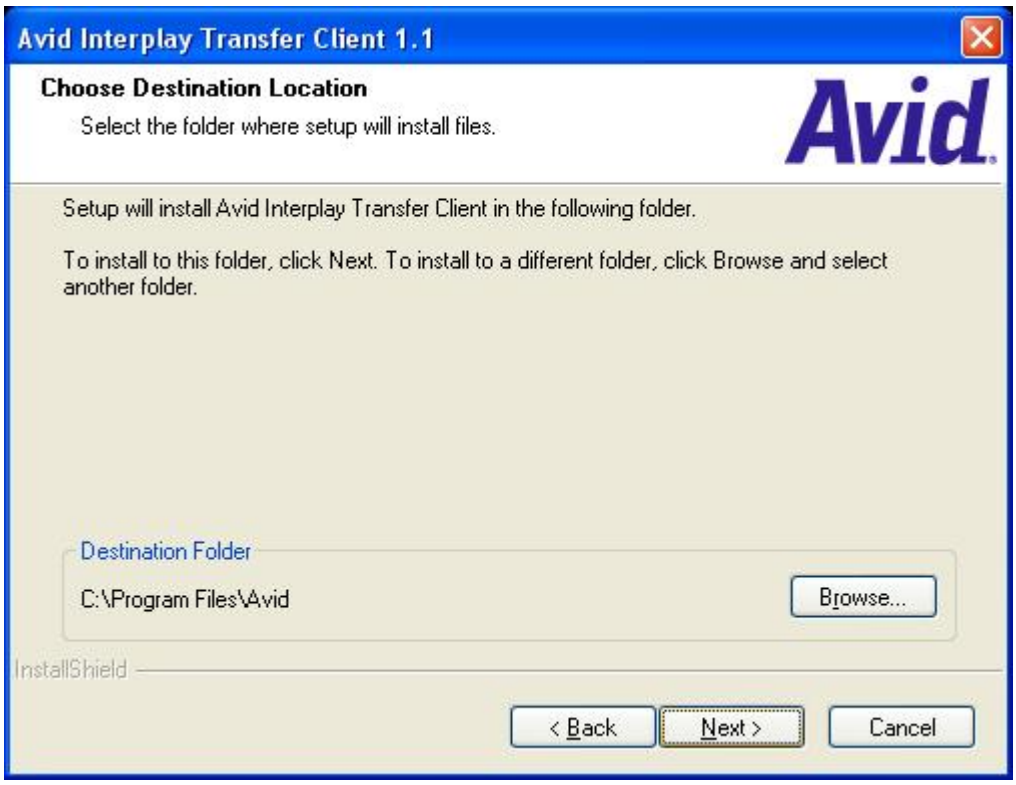
Click NEXT



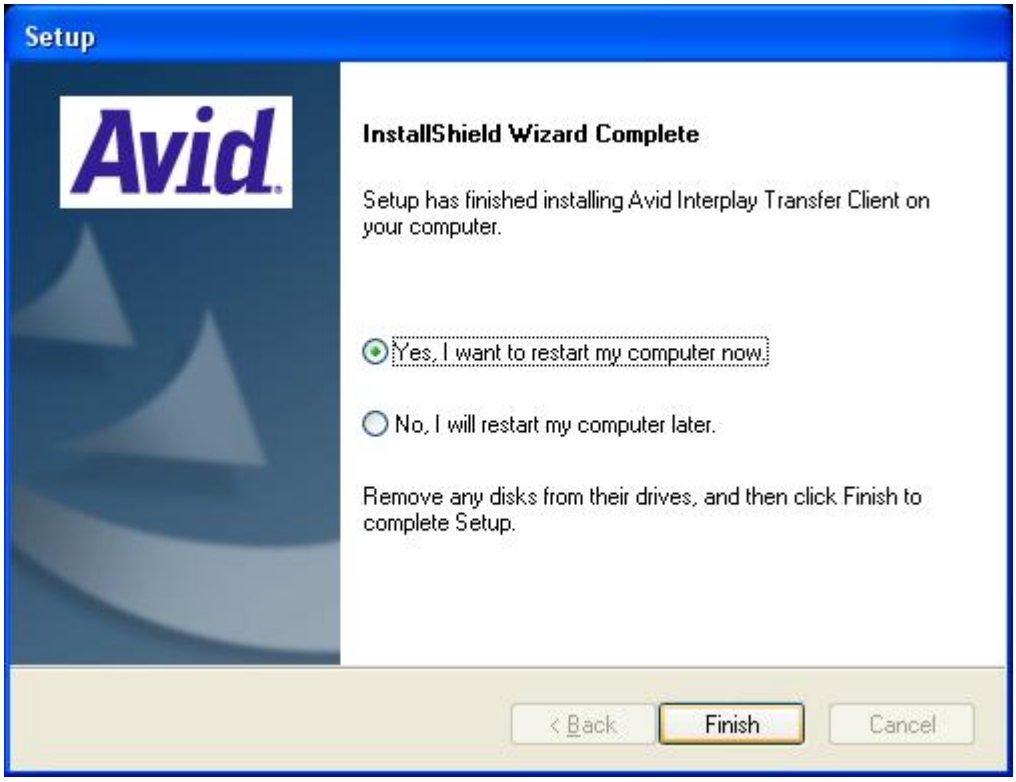
Click NEXT


Avid Interplay Transfer Client 1.1
License Agreement
Avid
You can use the Page Down key to view the license agreement.
Avid Technology, Inc.
END USER SOFTWARE LICENSE AGREEMENT
AVID TECHNOLOGY, INC. ("AVID") IS WILLING TO LICENSE THIS SOFTWARE TO YOU, THE LICENSEE, ONLY UPON THE CONDITION THAT YOU ACCEPT THE TERMS CONTAINED IN THIS LICENSE. BY CLICKING ON THE "YES" BUTTON, YOU ARE INDICATING THAT YOU HAVE READ ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT AND ANY ADDITIONAL TERMS AND CONDITIONS
Do you accept the terms of the License Agreement? If you choose No, Setup will close. To install, you must accept the agreement.
Print
InstallShield
< Back
Yes
No

Click YES


Avid Interplay Transfer Client 1.1
Choose Destination Location
Select the folder where setup will install files.
Avid
Setup will install Avid Interplay Transfer Client in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Avid
Browse...
InstallShield
< Back
Next >
Cancel

Select the directory and click NEXT. .NET framework 1.1 will be installed. Click NEXT in case it is not yet installed.


Setup
Avid
InstallShield Wizard Complete
Setup has finished installing Avid Interplay Transfer Client on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete Setup.
< Back
Finish
Cancel

TM client is completely installed. You must restart the computer.

Notes :

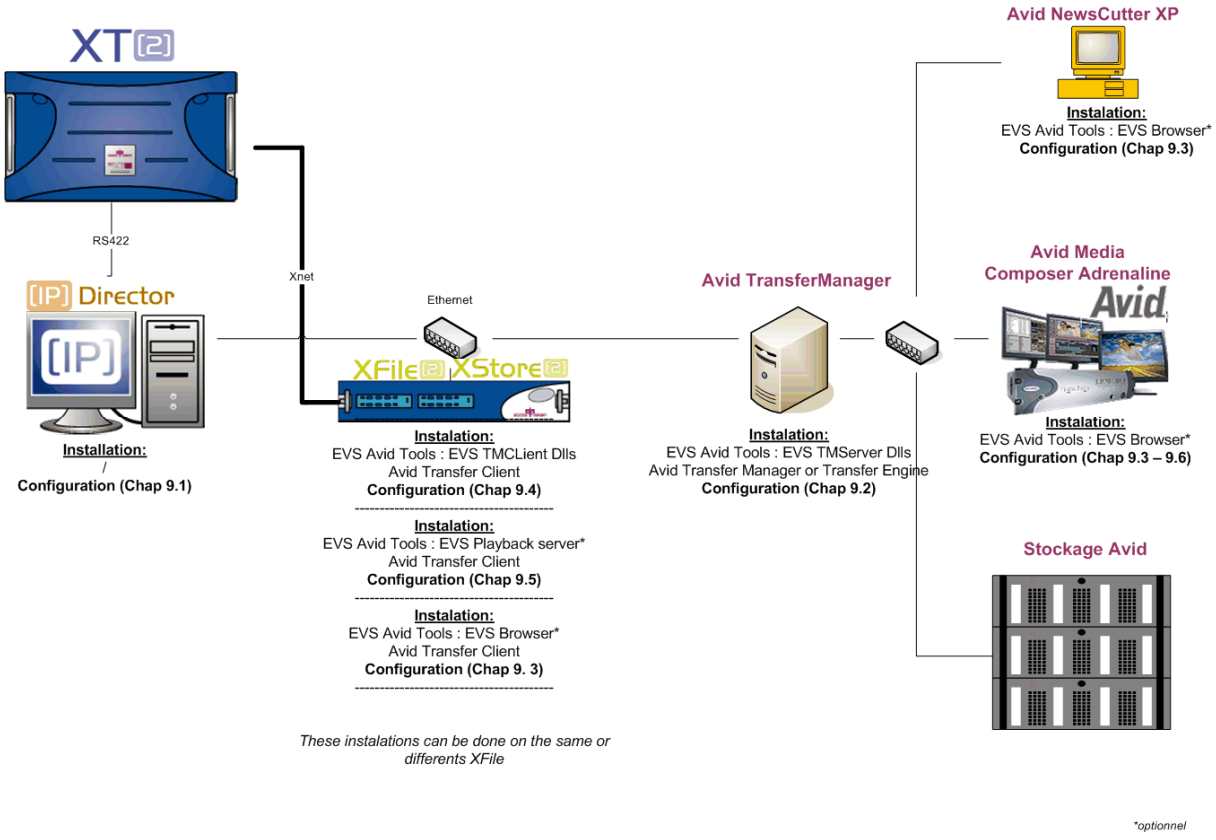
- In case TM Client is already installed on your computer, Avid Installer will ask you to first remove the older version.

9 INSTALLATION AND CONFIGURATION

This section explains which installshield and options to install for each workflow. The installation for each installshield is explained in the previous section 7.

The following diagram shows a typical EVS/Avid system and the different installations of component for each device:

- EVS IPDirector workstation
- EVS XFile[2] or XStore[2]
- Avid Transfer Manager Server
- Avid Editing station (Media Composer or NewsCutter).



Devices to be configured for each workflows described in section 6:

- **"Push streaming" via IP Director** : IPDirector - config only (§ 9.1), XFile (§ 9.3), Avid Transfer Manager Server (§ 9.2)
- **"Push" via backuped files** : XFile - via Xfile maintenance menu (§ 9.3) or browser on any device (§ 9.4), Avid Transfer Manager Server (§ 9.2)
- **"Pull" via backuped files** : Browser on Avid Media Composer (§ 9.4), Avid Transfer Manager Server (§ 9.2)
- **Live feed streaming (XStream)** : XFile (§ 9.3), Avid Transfer Manager Server (§ 9.2)
- **Send to Playback** : XFile (§ 9.5), Avid Transfer Manager (§ 9.2), Avid Media Composer (§ 9.6.2)

The installation of components for each device is described in the followings sections.

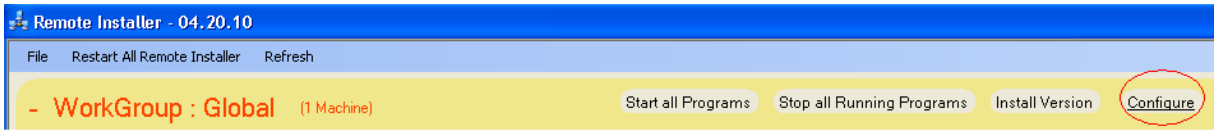
9.1 EVS IPDirector

IPDirector must be configured for the workflow “push” streaming to Avid explained in section 6.2.1.

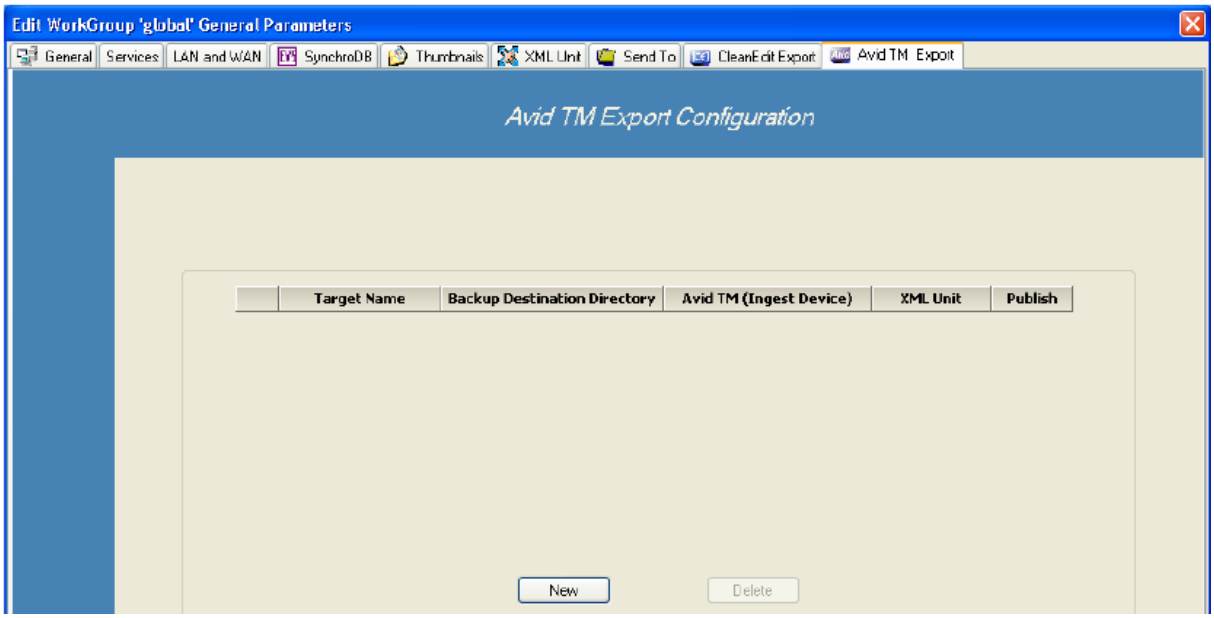
No EVS Avid tools or Avid Transfer Manager Client need to be installed on the IPDirector. You just need to configure “Avid Export” target. Note that “push” and “pull” via backup files workflows described in sections 6.2.2 & 6.2.3 need to create “Backup” target : they are not explained in this section as this configuration is related to IP Director and XFile backup only.

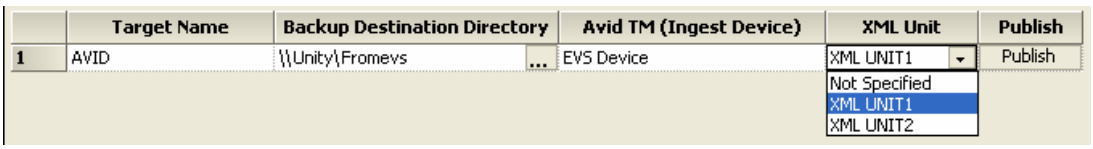
Open the Remote installer of the IPDirector

Click on the configure button:



Select the Avid TM Export Tab and Click on the ‘New’ button to add a new target.





- **Target Name** : This name will appear in the IP Director 'Send To' menu. It is used to identify the AVID target in the IP Director interface

- **Backup Destination Directory**: Click on the browse button to select the temporary folder where the AVID files will be sent before being transfer to Avid TM. Note: **Since IPDirector version 4 and Multicam package 8.04.19, this temporary folder is not used anymore but must still be defined in the IPDirector interface.**

- **Avid TM (Ingest Device):** Name of the EVS Device for the interface with Avid Transfer Manager Server. This information is used by Avid Transfer Manager Server to specify from which ingest device the transfer is initiated.

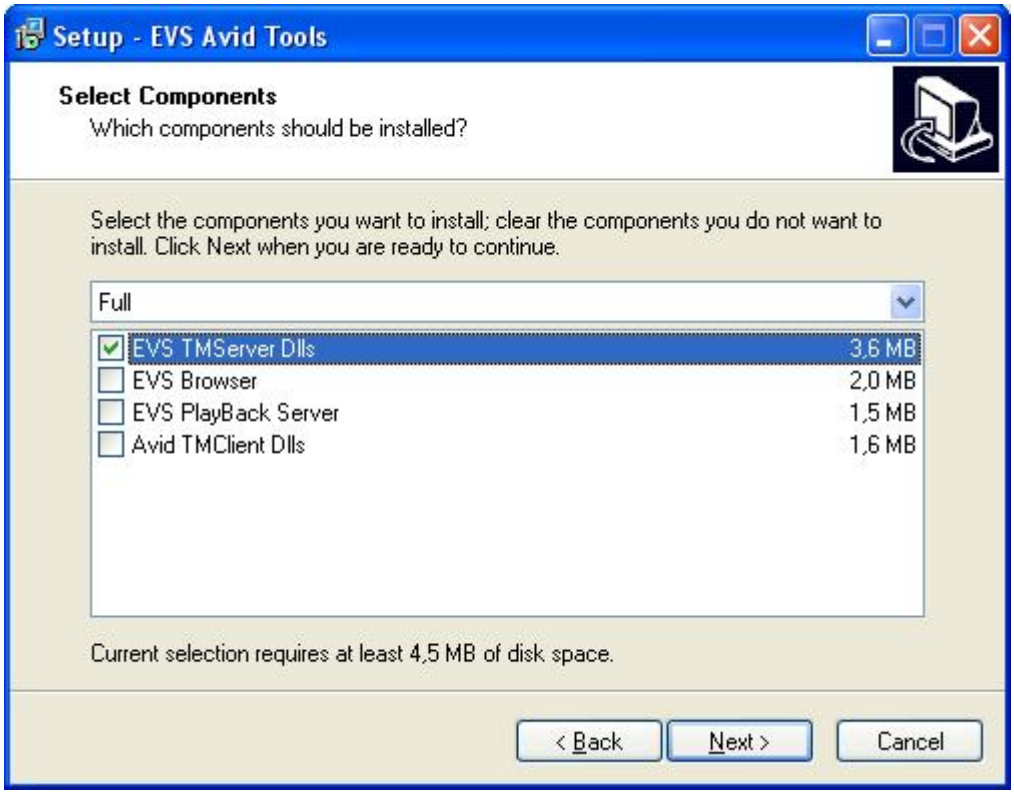
- **XML Unit**: specified the XML unit which will be used to perform the job. This unit should be located on the XFile which will be connected to the AVID Transfer Manager.

9.2 Avid Transfer Manager Server

Avid Transfer Manager must be configured for all the workflows described in section 6.

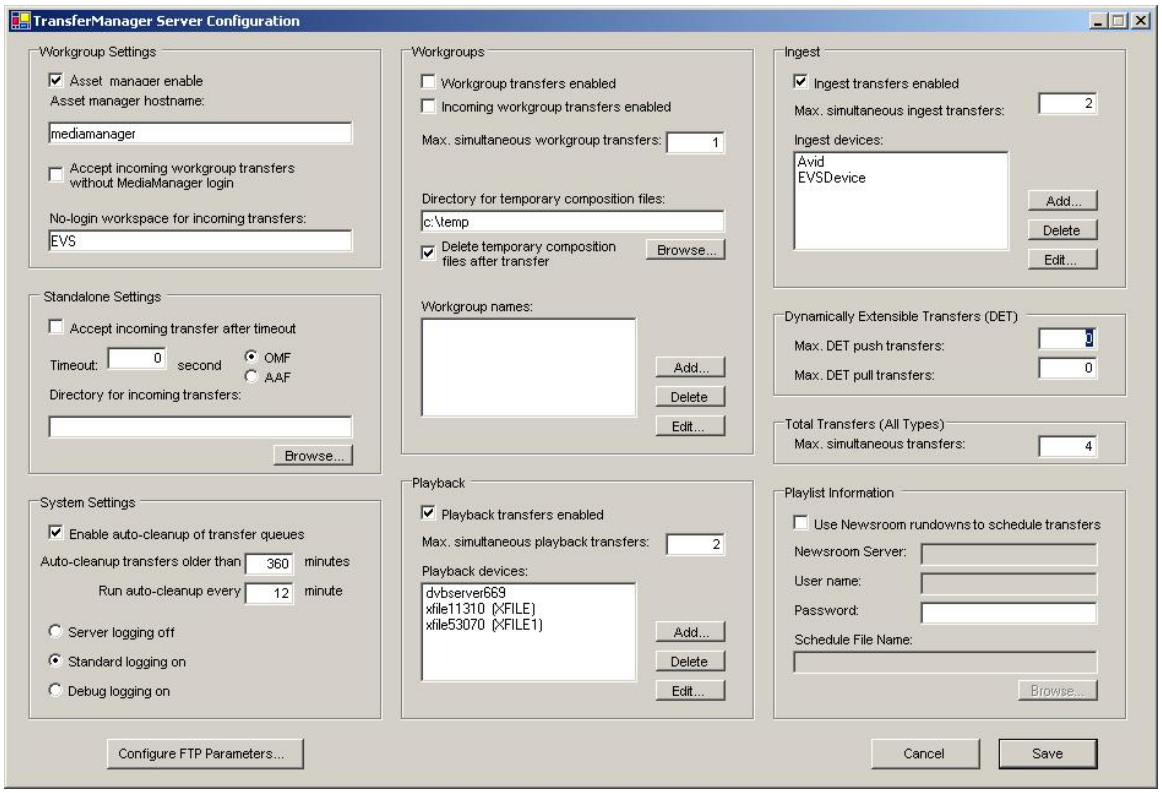
STEP 1 : Install EVS Avid Tools.

Launch EVS Avid Setup and select EVS TMServer dlls (see section 8.1).


Setup - EVS Avid Tools
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full
EVS TMServer Dlls 3,6 MB
EVS Browser 2,0 MB
EVS PlayBack Server 1,5 MB
Avid TMClient Dlls 1,6 MB
Current selection requires at least 4,5 MB of disk space.
< Back
Next >
Cancel

STEP 2 : Transfer manager Server Configuration .

This is a typical configuration to be used with EVS. See “Avid Unity Transfer Manager – Setup and User’s Guide” for additional information.



- **Workgroup settings :**
  - Asset Manager HostName : in case the system is connected to a Avid Media Manager server, the name of the asset manager must be specified
  - Non-login Workspace for incoming transfer : please enter the workgroup name, in this case EVS.
- **Standalone Settings :** to be filled in case of a TM in standalone on MCA station.
  - You must select either OMF or AAF mode. This must be compliant to the Media Creation mode in your project settings in MCA.
  - Directory for incoming transfer must be defined accordingly :
  - OMF : Drive:\OMFI MediaFiles
  - AAF : Drive:\Avid MediaFiles\MXF\1 for example
- **Playback :**
  - Select “Playback transfers enabled”
  - Choose the max. simultaneous playback transfers, e.g. 2
  - Add the computer name where the EVS Avid Playback Server is running. In this example, it is dvbserver669 or xfile11310.
- **Ingest :**
  - Select “Ingest transfers enabled”
  - Choose the max. simultaneous ingest transfers, e.g. 2
  - Add the EVS ingest device used for transfer (Xfile or EVS Avid Browser). In this example, it is EVSDevice (TM Host name) like defined above.

- **Total transfer :**
    - The value must >= 2 x # ingest transfers + # playback transfers
    - Max Total transfer advised by Avid : 8

STEP 3 : Check the connection with storage drive for ingest and playback.

Transfer Manager Server must access through the network (LAN) the ingest and playback storage with read and write files capabilities.

You must thus check the access via UNC path (e.g. using Windows Explorer/entire Network/).

Note that for the "push" streaming from IP Director where Xfile is used as a gateway only, storage does not need to be accessible (only the IP address of Xfile).

Remarks/tips :

- **Windows Workgroup / Domain :** As Xfile is defined in a Workgroup, Avid Transfer Manager and other Avid devices must also be defined in a Workgroup, not a Domain ! Workgroups can be different but the same workgroup for all the EVS & Avid devices will facilitate the search of a device in the Windows network.
- The storage drive can be mapped on the Transfer Manager server for an easy reconnection after a re-boot.
- Windows workgroup and logon could cause some difficulties to access the drive. Some tips :
    - Use a login on the storage device with a password. Windows XP could block the access without password like login DVB and no password.
    - Create an Users with login and password of the remote drive computer and add Administrator properties to this user.
    - Once accessible, map the remote drive on the Transfer Manager server so the access will be automatically restored at each reboot of the Transfer Manager Server.
- TM Client do not need to be installed on the Transfer Manager Server device, unless other client application are running like Avid Media Composer (i.e. standalone configuration).

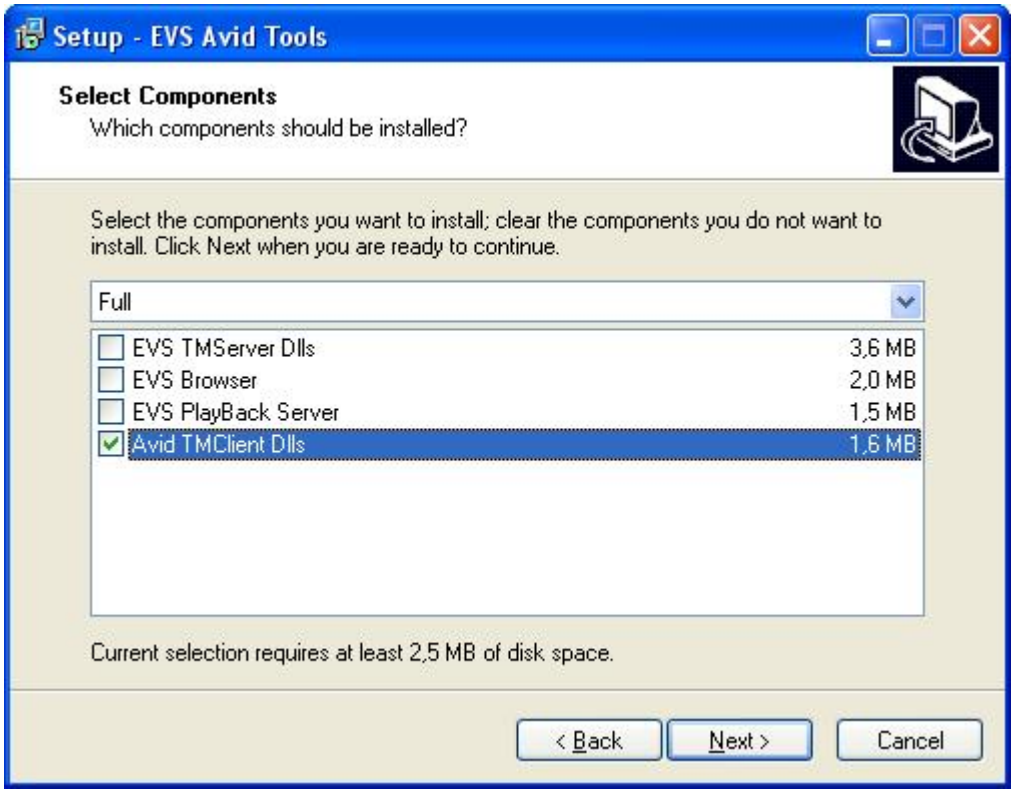
9.3 XFile & XStream

The EVS Xfile or XStream is used in the following workflows :

- Clip “push” streaming via IP Director & Xfile (see section 6.2.1) .
- Clip “push” via backuped files (using Xfile Export in Maintenance menu) (see section 6.2.2)
- Live Feeds streaming via XStream (see section 6.2.4).

STEP 1 : Install EVS Avid Tools.

Launch EVS Avid Setup and select Avid TMClient dlls (see section 8.1).


Setup - EVS Avid Tools
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full
EVS TMServer Dlls 3,6 MB
EVS Browser 2,0 MB
EVS PlayBack Server 1,5 MB
Avid TMClient Dlls 1,6 MB
Current selection requires at least 2,5 MB of disk space.
< Back
Next >
Cancel

STEP 2 : Transfer Manager Client Installation

See section 8.2

STEP 3 : Edit TMClient.ini

Copy and edit the file “TMclient.ini” located in C:\Program Files\EVS Broadcast Equipment\Xfile\ & C:\Program Files\EVS Broadcast Equipment\XStream\ by adding or replacing the Avid TM server name by the computer name of the server where Avid Transfer Manager runs. Example :

[MyServer,MyWorkgroup]

MyServer = TM-UNITY, WORKGROUP

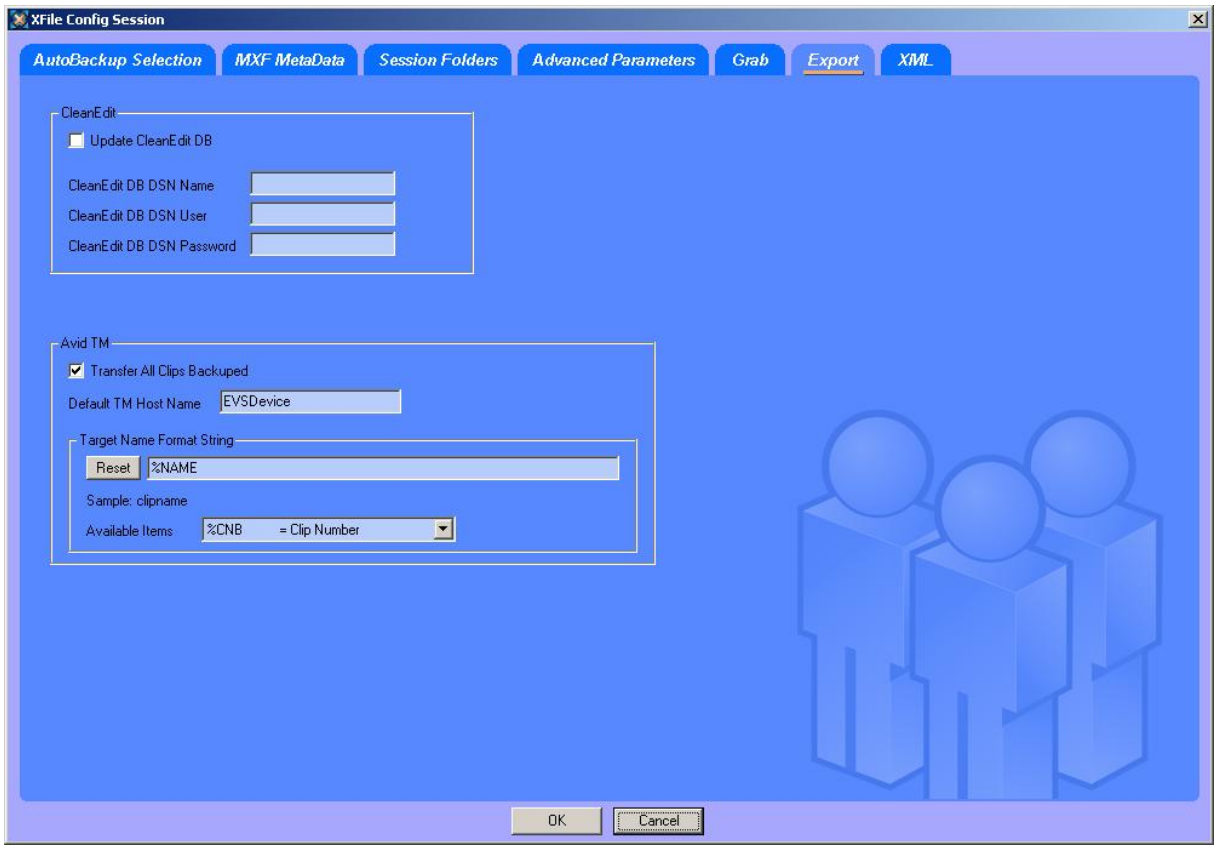
- Tip : remove in TMClient.ini all references to servers which are not available on the network: otherwise initialisation of the transfer will be delayed (timeout) before starting transfer of data.

STEP 4a : Xfile Configuration.

Remark :

In case of IP Director, the XML file triggering the transfer will collect all the information related to the transfer.

In XFile, select “Export” configuration tab in “Config Session” : see also Xfile User’s Manual.

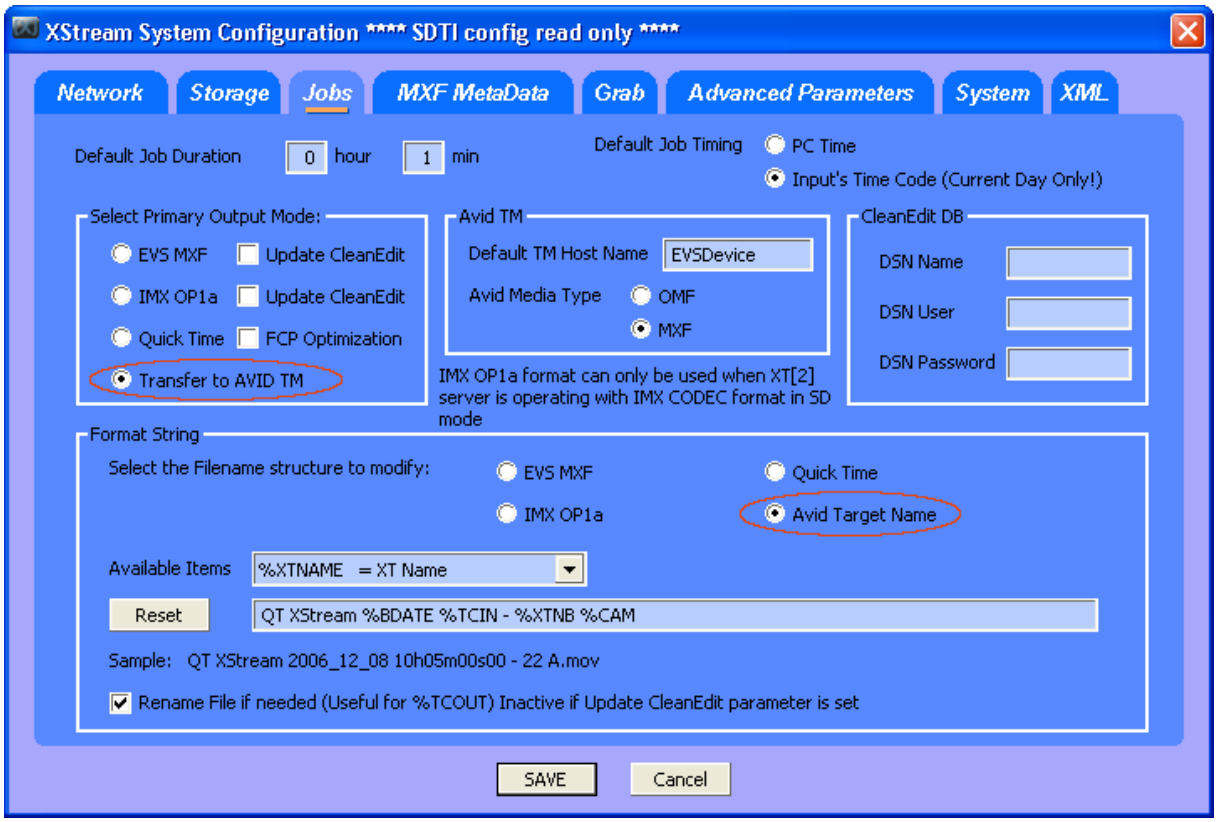


- **Transfer All Clips Backuped** : Each clip backuped will be automatically transferred to Avid if checked. Otherwise no action will be taken after a backup of file. **Typically not selected.**
- **AvidTM:default TM_HostName** : e.g. EVSDevice as defined in the Transfer Manager Server Configuration (Ingest)
- **Target Name Format String** : This is the name format of the file to be generated in Avid storage.

STEP 4b : XStream Configuration.

Note : Xfile must be first configured as described in the previous section for the Avid Host Name and Avid Name format string.

In XStream application, select “Jobs” configuration tab in “System Configuration” : see also XStream User’s Manual.



- **Primary Output Mode :** Select Transfer to Avid TM.
- **AvidTM:**
  - **default TM_HostName** : e.g. EVSDevice as defined in the Transfer Manager Server Configuration (Ingest)
  - **Avid Media Type** : select the OMF or MXF to specify the Avid file format used by Avid NLE or Unity Storage.
- **Format String** : Select and edit the Avid Target Name. This is the name format of the file to be generated in Avid storage

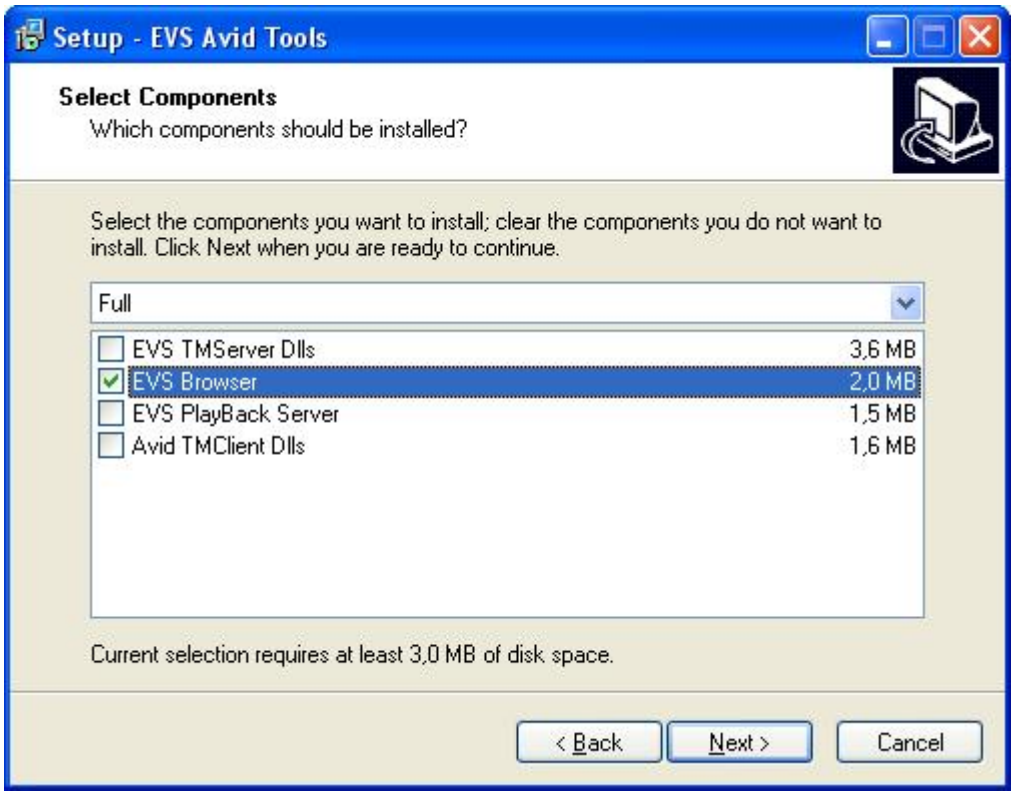
9.4 EVS Avid Browser

The EVS Avid browser is used in the following workflows :

- Clip “push” via backuped files (see section 6.2.2) : the browser is installed on any remote device connected to Avid Transfer Manager and Xfile storage via LAN.
- Clip “pull” via backuped files (see section 6.2.3) : the browser is installed on the Avid editing station (i.e. Avid Media Composer)

STEP 1 : Install EVS Avid Tools.

Launch EVS Avid Setup and select EVS Browser (see section 8.1).


Setup - EVS Avid Tools
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full
EVS TMServer Dlls 3,6 MB
EVS Browser 2,0 MB
EVS PlayBack Server 1,5 MB
Avid TMClient Dlls 1,6 MB
Current selection requires at least 3,0 MB of disk space.
< Back
Next >
Cancel

STEP 2 : Transfer Manager Client Installation

See section 8.2

STEP 3 : Edit TMClient.ini

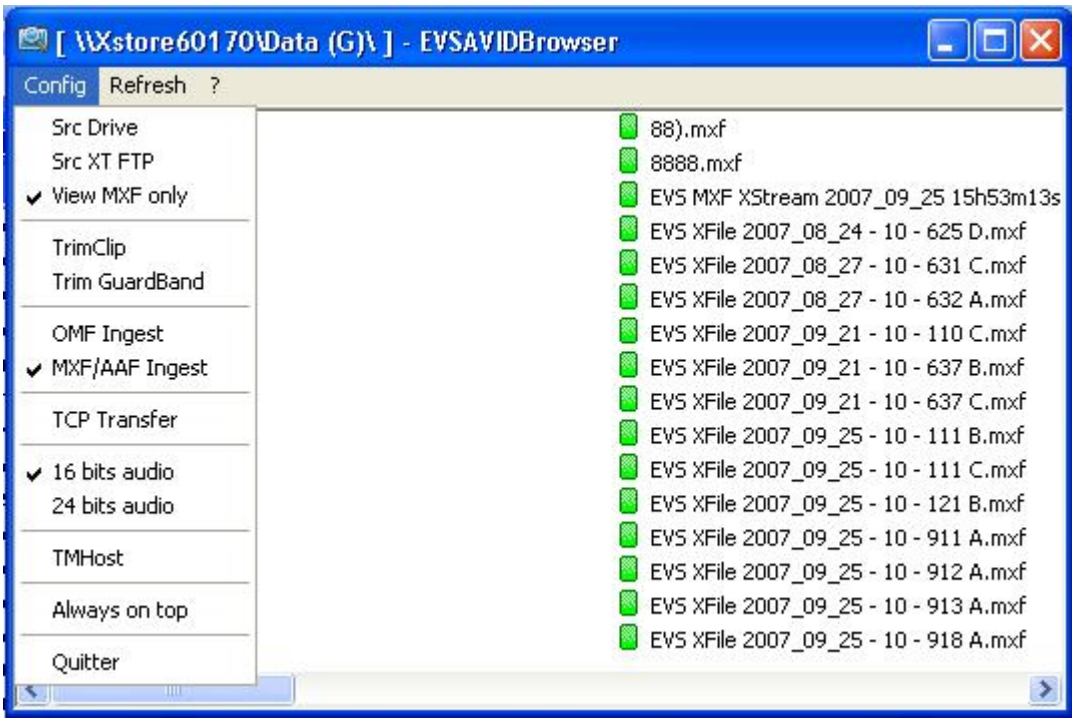
Edit the file “TMclient.ini” located in C:\Program Files\EVS Avid Tools\ by adding or replacing the Avid TM server name by the computer name of the server where Avid Transfer Manager runs. Example :

[MyServer,MyWorkgroup]

MyServer = TM-UNITY, WORKGROUP

- Tip : remove in TMClient.ini all references to servers which are not available on the network: otherwise initialisation of the transfer will be delayed (timeout) before starting transfer of data.

STEP 4 : EVS Avid Browser Configuration.


[\\Xstore60170\Data (G)\ ] - EVSAVIDBrowser
Config
Refresh
?
Src Drive
Src XT FTP
View MXF only
TrimClip
Trim GuardBand
OMF Ingest
MXF/AAF Ingest
TCP Transfer
16 bits audio
24 bits audio
TMHost
Always on top
Quitter
88).mxf
8888.mxf
EVS MXF XStream 2007_09_25 15h53m13s
EVS XFile 2007_08_24 - 10 - 625 D.mxf
EVS XFile 2007_08_27 - 10 - 631 C.mxf
EVS XFile 2007_08_27 - 10 - 632 A.mxf
EVS XFile 2007_09_21 - 10 - 110 C.mxf
EVS XFile 2007_09_21 - 10 - 637 B.mxf
EVS XFile 2007_09_21 - 10 - 637 C.mxf
EVS XFile 2007_09_25 - 10 - 111 B.mxf
EVS XFile 2007_09_25 - 10 - 111 C.mxf
EVS XFile 2007_09_25 - 10 - 121 B.mxf
EVS XFile 2007_09_25 - 10 - 911 A.mxf
EVS XFile 2007_09_25 - 10 - 912 A.mxf
EVS XFile 2007_09_25 - 10 - 913 A.mxf
EVS XFile 2007_09_25 - 10 - 918 A.mxf

- **Refresh** : To refresh the directory selected. Shortcut : F5.
- **Source**
  - **Src Drive** : Browse through the network to select a drive/directory to browse. Click on OK and all the files available in this directory will be displayed. The drive path must be a UNC.
  - **Src XT FTP** : *for future use with Multicam 9 & GigE connection to XT[2]*
  - **View MXF only** : to filter and only display MXF files.
- **Clip Trimming :**
  - **TrimClip :** Select this option to transfer only Clip IN/OUT instead of File IN/OUT.
  - **Trim GuardBand :** In case TrimClip is selected, this allows to add a guard band to Clip IN/OUT.
- **Avid file format :**
  - **OMF File:** specify the OMF file format as file format on Avid storage
  - **MXF/AAF File** : specify the MXF/AAF file format as file format on Avid storage
- **TCP Transfer** : for future use
- **Audio sampling resolution :**
  - **16 bits audio :** select this option to ingest in 16-bit audio
  - **24 bits audio** : select this option to ingest in 24-bit audio
  - Note that the Avid Media Composer Project must be setup accordingly regarding its audio sampling resolution parameter in Audio Project settings.

- **TMHost** : This the name of the EVS device defined in the Transfer Manager Server Configuration (Ingest section) : e.g. EVSDevice
- **Always on top** : Select this option to always display the EVS Avid Browser on top of the display layers (overlaid).

9.5 EVS Playback Server

EVS Playback server is used for the Send to Playback workflow (Avid to EVS) (see section 6.3) :

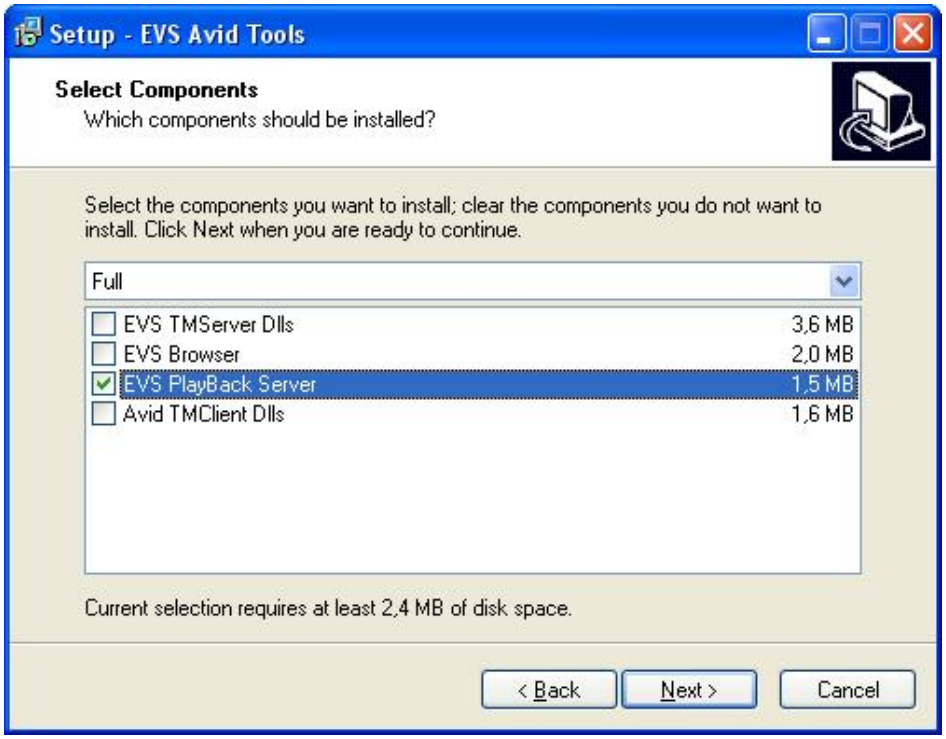
This server must be installed on any workstation connected via a LAN to the Avid Transfer Manager Server. **Typically it is installed on the destination Xfile but this is not mandatory**.

Important Notes : Send to Playback workflow uses an Avid TCP/IP protocol with some implications :

- The EVS Playback Server **MAY NOT BE** installed on the Avid Transfer Manager Server. This will result in Avid protocol errors (TCP ports conflicts by both applications).
- Avid Send to playback is based on a TCP/IP protocol. The Ethernet GigE connection used to communicate with Avid Transfer Manager must be located in the first position in the Windows Network setup of the workstation to choose this interface. Otherwise Transfer Manager server is not able to “see” the EVS Playback server application. Loopback and other Ethernet boards must be either disabled or shifted behind.

STEP 1 : Install EVS Avid Tools.

Launch EVS Avid Setup and select EVS Playback Server (see section 8.1).

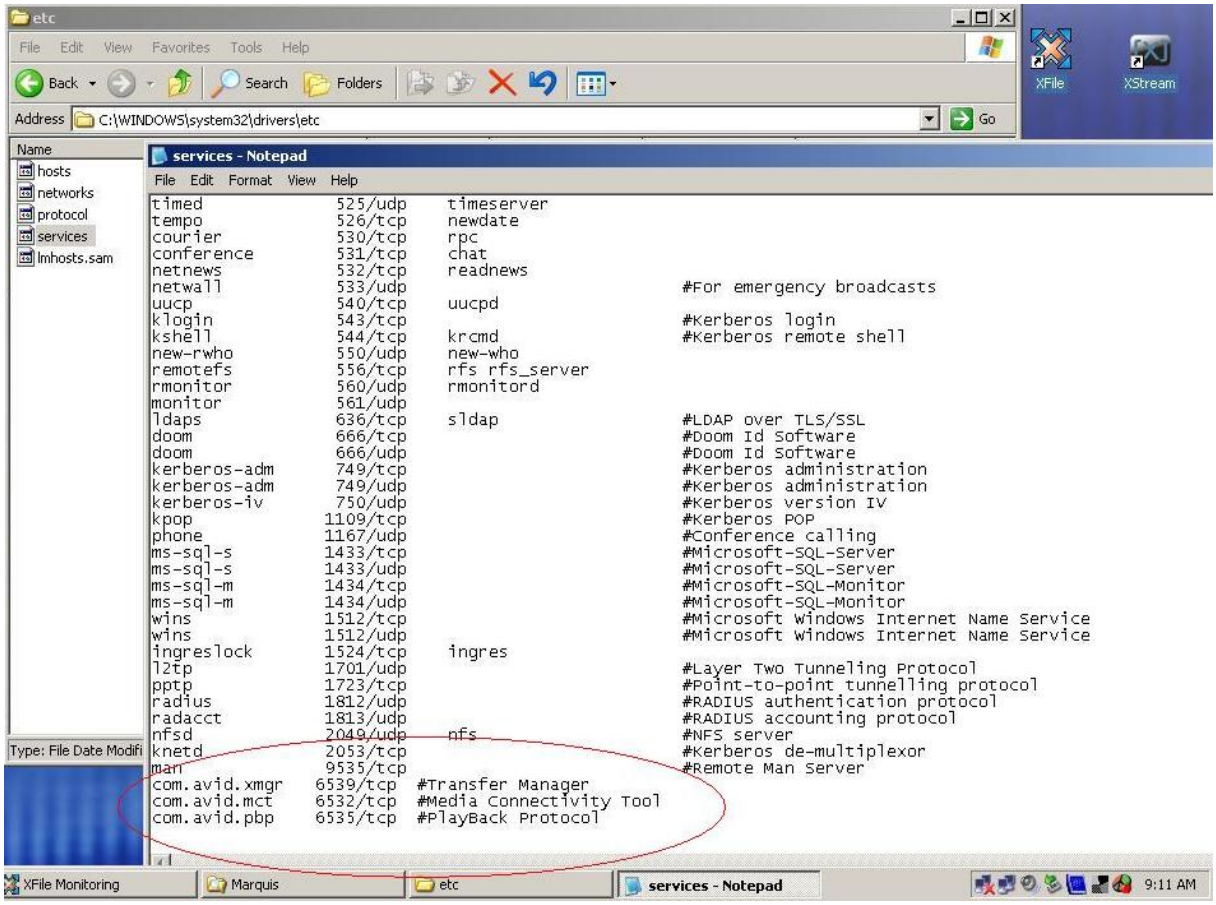

Setup - EVS Avid Tools
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full
EVS TMServer Dlls 3,6 MB
EVS Browser 2,0 MB
EVS PlayBack Server 1,5 MB
Avid TMClient Dlls 1,6 MB
Current selection requires at least 2,4 MB of disk space.
< Back
Next >
Cancel

STEP 2 : Transfer Manager Client Installation

See section 8.2

STEP 3 : Check of the Avid protocols port definition

Open the C:\Windows\System32\Drivers\Etc\services (e.g. with Notepad) and check the protocols port are well defined.



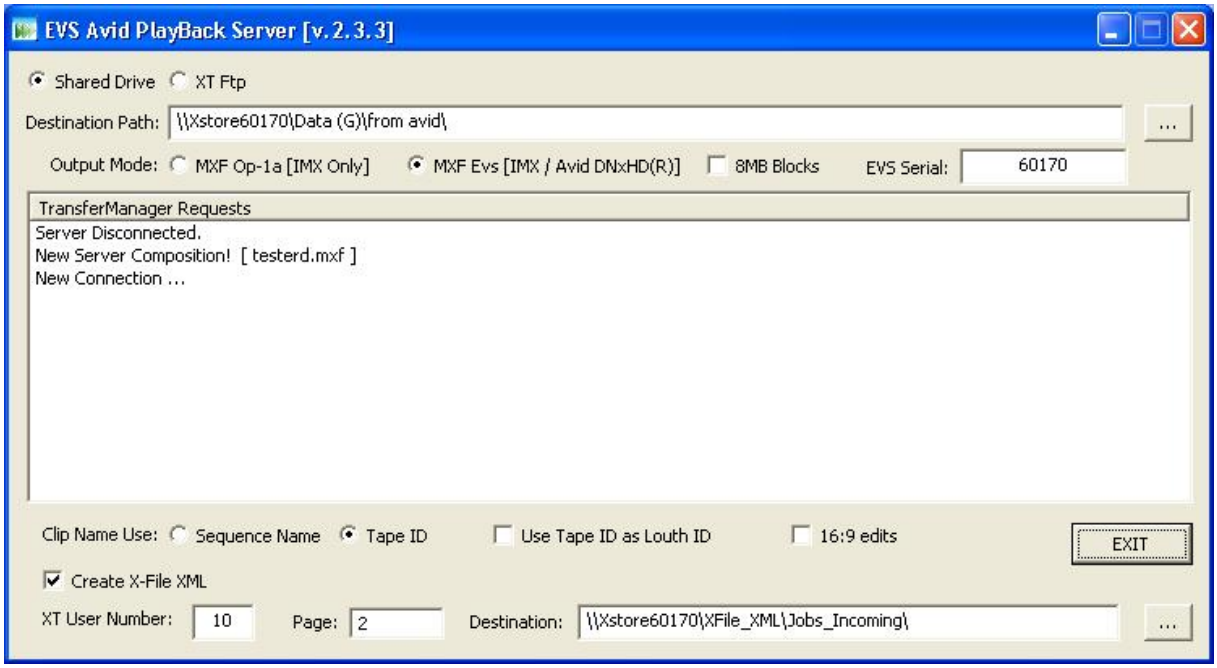
- com.avid.xmgr is added by the Transfer Manager Client installshield
- com.avid.mct is added by the EVS Avid Tools setup (EVS Playback server option)
- com.avid.pbp is added by the EVS Avid Tools setup (EVS Playback server option)

Remark on the use of Firewalls : Avid transfer Manager is based on a TCP/IP protocol. Firewalls could block some ports : The following ports 6539/tcp, 6532/tcp, 6535/tcp must be added in the exception list of the firewall.

STEP 4 : EVS Playback Server Configuration.

Launch EVS Playback Server :

Note : in case of any problem (i.e. RunTime error) to launch the EVS Playback Server, please check the protocols are well available in the “services” files (see above).



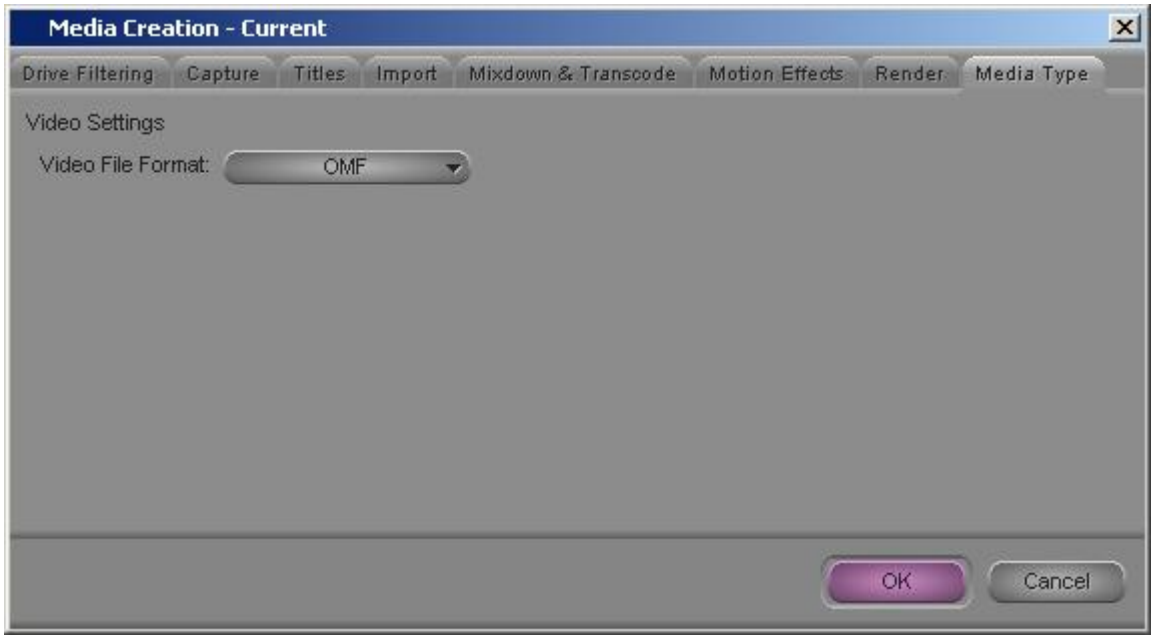
- Select "**Shared Drive**". *"XT FTP" is for future use with Multicam 9 and GigE connection with XT[2].*
- **Destination Path** : Browse to select the Destination Path. It must be a UNC path, not through a mapped or local drive. ***Important*** : check that Transfer Manager server is able to open and write a file in this directory via the network.
- **Output Mode** :
  - **MXF OP-1a :** To select MXF OP-1A as output file format, for IMX-D10 codec only !
  - **MXF EVS :** To select MXF EVS as output file format. Valid for both IMX-D10 & Avid DNxHD ® Codecs.
  - **8 MB Blocks** : *for future use with Multicam 9*
- **EVS Serial** : Select **the EVS Serial number** to uniquely generate a ID Material on XT server which will be associated with Exported MXF media. The Serial Number must be a value between 10000 & 99990 and a multiple of 10.
- **Clip Name Use** :
  - **Sequence Name** : The clip name in XT server will be the Avid Sequence Name defined in the Avid NLE.
  - **Tape ID** : the clip name in XT will be the Tape ID entered during Send to Playback procedure.
- **Use TapeID as Louth ID** : In case of use of EVS Spotbox, Tape ID can be automatically defined as the Louth ID. Be careful about limitations related to Louth ID in EVS XT server (no check out is done at this level)
- **16:9 edits** : Avid Transfer Manager does not export the video aspect ratio : this must be forced at the level of EVS Playback Server when generating the IMX file.
- **Create X-File XML**: In case you want to automatically restore the exported IMX file to the EVS XT[2] server, select "Create XFile XML"

- Enter The XT User Number defined in Xfile (XNET ID)
- Select the Page from where the clips will be restored.
- Browse to define the directory to post the XML file. It must be an UNC path.

9.6 Media Composer Adrenaline Configuration

9.6.1 EVS to Avid Workflows

In Project settings, **Media Creation** must be setup as “OMF” or “MXF”. When using Media Manager or Interplay Engine, OMF or AAF (MXF) is defined in Media Manager or Interplay Engine setup. Any project linked to Media Manager/Interplay Engine will be automatically setup to the actual mode.



Note : Media Creation mode OMF/MXF must be identical to the OMF/MXF mode in Transfer Manager server.

- In standalone mode, you must select it manually in “Transfer Manager Configuration”. ***Note that MXF mode generates an error in TC format. It is then recommened to use OMF mode in standalone mode.***
- With Avid Unity environment, the mode is automatically defined by Media Manager.

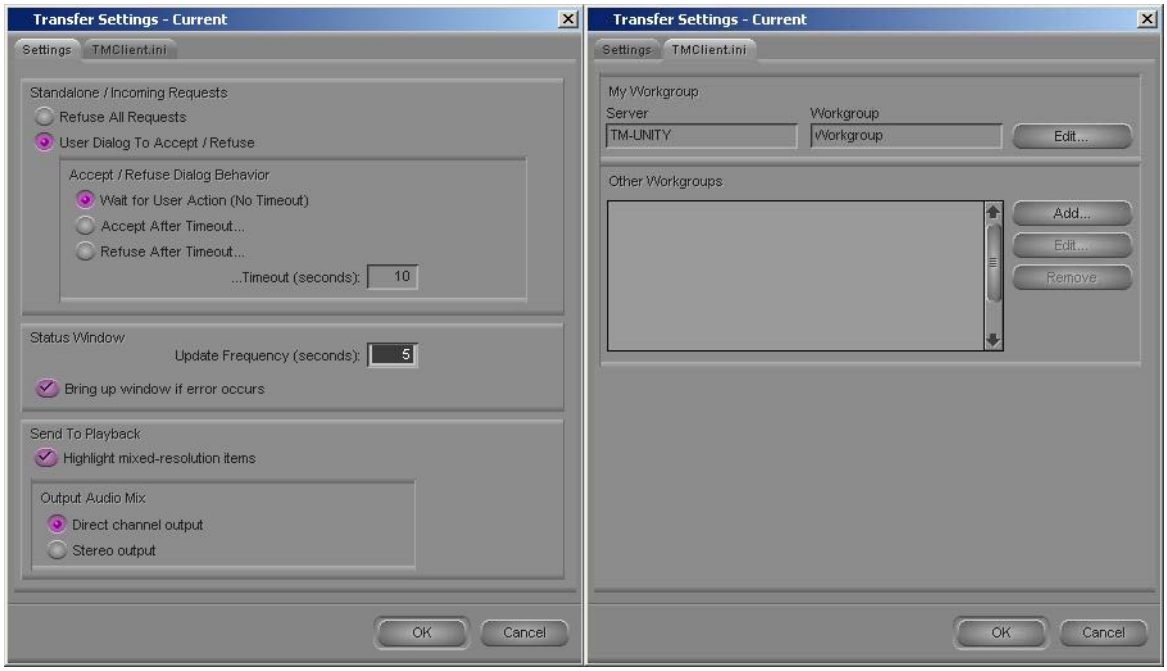
9.6.2 Export Avid to EVS workflows (EVS Playback Server)

Note : Transfer Manager Client must be installed on Media Composer station (see section 8.2)

In Project settings, **Transfer** must be configured as follows :

- Settings
    - Output Audio Mix : Direct channel output or stereo output

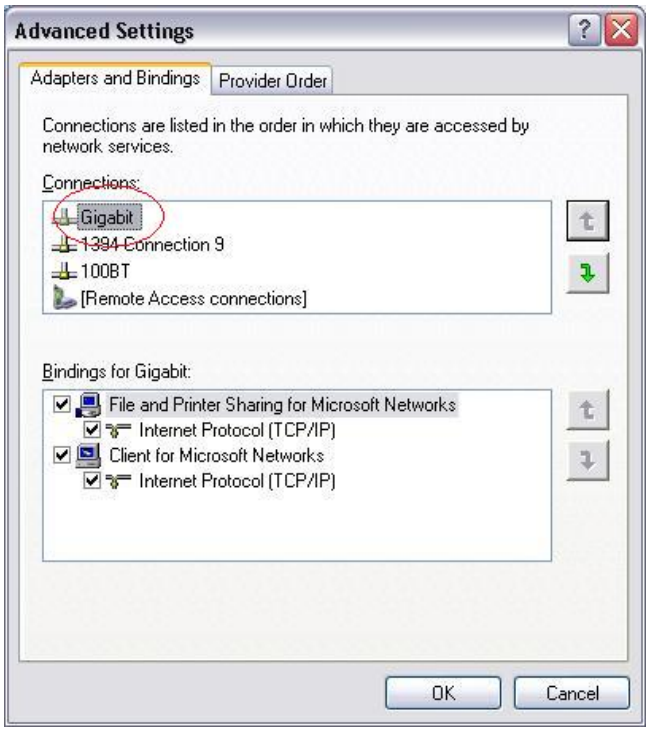
- TMClient.ini
    - Server : Computer name of the server where runs Avid Transfer Manager Server. Example : TM-UNITY
    - Workgroup : example : Workgroup



10 KNOWN BUGS, LIMITATIONS & CONSTRAINTS

10.1 Generalities

- **Avid DNxHD® Codec high level (185/220 Mbps):** Only the 8-bit 220 Mbps 1080i59.94 mode is currently implemented. Others high level modes (8-bit 185 Mbps for 1080i50 & 8-bit 220 Mbps for 720p59.94) are planned for a next release.
- **Transfer Manager FTP mode:** It does not use the Avid TM APIs. It is possible to transfer IMX MXF OP-1a file located on a FTP server using the Avid FTP client like a browser. Note only IMX MXF OP-1a is supported (development done for XDCAM import/export)
- **Use of Multiple Network Connections on XFile** : Avid Transfer Manager API is based on a TCP/IP protocol. The Ethernet GigE connection used to communicate with Avid Transfer Manager must be located in the first position in the Windows Network setup of the workstation to choose this interface. Otherwise the IP Address sent to Transfer Manager is wrong and Transfer Manager server is not able to "see" the EVS ingest devices or the EVS Playback server application. Loopback and other boards must be either disabled or shifted behind. You can modify the position of the GigE connections in Windows Start Menu : Settings>Network Connections>Advanced>Advanced Settings like below :



- **Firewall :** Avid transfer Manager is based on a TCP/IP protocol. Firewalls could block some ports : The following ports 6539/tcp, 6532/tcp, 6535/tcp must be added in the exception list of the firewall.
- **Windows Workgroup / Domain :** As Xfile is defined in a workgroup, Avid Transfer manager and other Avid devices must also be defined in a workgroup, not a domain.

Workgroups can be different but the same workgroup for all the EVS & Avid devices will facilitates the search of a device in the Windows network.

- **Interplay only supports Avid AAF/MXF file format** (not OMF). EVS Avid Browser must be setup accordingly. Streaming from IP Director or XStream lets Avid choosing the file format automatically.
- **Avid Best Practices Recommendations :**
  - Avid recommends max. of 4 simultaneous transfers (ingest & playback) per Transfer Manager Server.
  - Avid recommends to restart Transfer Manager Application at least once a week

10.2 Ingest to Avid

- **Avid DNxHD® Codec with Quick Time format :** not supported by EVS. The only way to transfer a Avid DNxHD® Codec file to Avid is via Avid Transfer Manager, not via Manual import of Avid DNxHD® Codec file wrapped in Quick Time Movies.
- **WG 4:** TMAuto generates AAF/MXF files with TC and duration errors. OMF mode is recommended when using TMAuto (i.e. "push" workflows – see section Workflows). No problem with Avid Interplay versions.
- **Push workflows with Interplay**: the file duration is set at 2 seconds at the beginning of the transfer. The duration is updated only after 2-3 minutes. In the meantime, only the 2 sec of content are available for editing. Limitation by Interplay.
- **Editing during transfer to Avid** is possible provided :
  - Avid file format (storage) is AAF/MXF (not OMF)
  - Media Manager or Interplay Engine (Unity) is implemented to access Media during transfer
  - Avid shared storage (Unity family) is implemented (not possible with local storage).
- **Multi Camera Editing mode**: It is only possible to group synchronized inputs or clips for multi camera editing once the clip is completely transferred to Avid (Avid MXF file closed). It is then not possible to edit synchronized camera in one group during transfer. This is a limitation related to Avid Media Composer.
- **EVS Avid Browser in trimming mode** : If trimming mode (clip in/out) is selected in the EVS Avid Browser configuration, the transfer to Avid failed. To be corrected in a next release.

10.3 Send to Playback (to EVS)

There exist some limitations or constraints related to the Avid sequence in order to correctly use Avid Send to Playback feature with EVS devices:

- MXF OP-1a format in NTSC : Send to playback in NTSC and MXF OP-1a is faulty. OK for PAL or NTSC MXF EVS. To be corrected in a next release.

- The Avid sequence must be setup in IMX (MPEG) 30, 40 or 50 or Avid DNxHD® Codec, not DV or any other codec!
- Audio settings resolution must be 16-bit or 24-bit, uncompressed and 48 Khz
- Avid Media Composer must perform a Audio Mix down before transfer to EVS
- No audio blanks should remain in the time line, including at the beginning and at the end of the time line.
- Only one video track defined in the timeline, all the additional video tracks must be rendered before transfer
- At least one audio track and one video track must be present in the time line.
- In case video and audio fillers are added in the timeline, you must force a video & audio mixdown before transfer otherwise those fillers will be ignored in the MXF file generated for restoration on XT server. An alternative is to replace the filler by black video.

10.4 Tips

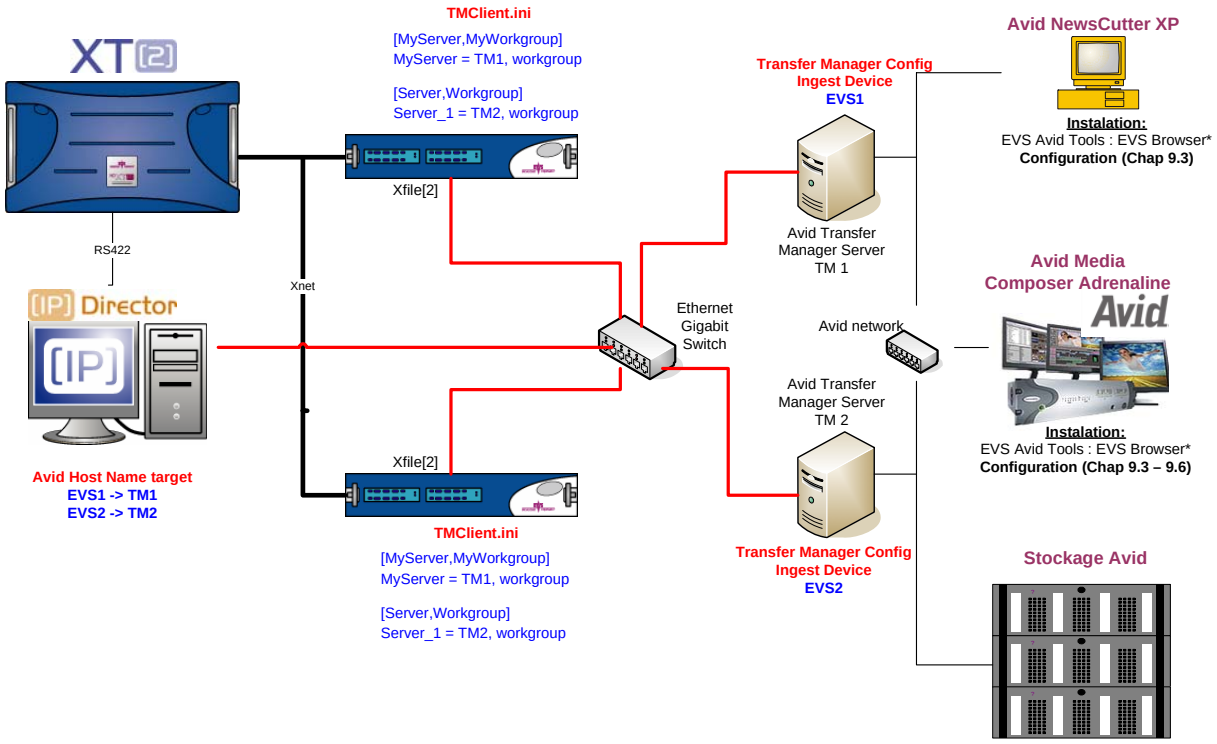
- TMClient.ini: remove all references to servers which are not available on the network: otherwise initialisation of the transfer will be delayed (timeout) before starting transfer of data.

11 WORKING WITH MULTIPLE TRANSFER MANAGER SERVERS

Big studio environments are composed of a large amount of EVS XT servers, IP Director stations, Xfile/Store gateways and also multiple Transfer Managers Servers attached to the Avid Unity System.

Avid Transfer Manager Server can not manage active redundancy or load balancing : this means the EVS server must specifically define which Transfer Manager is targeted.

The figure below represents a typical environment with 2 Xfile Gateways connected to 2 Transfer Manager Servers. This configuration can be extended to multiple Xfile/Transfer Manager Servers. We consider the workflow “push streaming” triggered by IP Director.



On the IP Director stations, we can define several Avid targets : we will consider 2 Avid targets TM1 & TM2.

In the configuration menu of the Transfer Manager Servers, the Ingest devices will be named EVS1 in TM1 and EVS2 in TM2. Similarly, the HostName of the Avid target of IP Directors stations will be also named EVS1 for TM1 and EVS2 for TM2.

When selecting an Avid Target, IP Director will send a XML file to a predefined directory to be scanned by Xfile gateways. This directory can be the local XML directory of the Xfile (local scan) or a centralized directory scanned by several Xfile (Load balancing).

The Xfile will use the Avid Hostname defined in the XML (EVS1 for target TM1 or EVS2 for target TM2) to select the target Transfer Manager server. In order for any Xfile device to connect any Transfer Manager Server, the TMClient.ini file located in the Xfile directory must list all the transfer Manager servers available like described bellow :

[MyServer,MyWorkgroup]
MyServer = TM1, workgroup

[Server,Workgroup]
Server_1 = TM2, workgroup

In this sample file, the Xfile will connect both TM1 & TM2 and select for the transfer the one where is defined the appropriate Ingest device : EVS1 in TM1 or EVS2 in TM2. We can put additional servers names in the [Server,Workgroup] tag.

As Transfer Manager is not capable of managing load balancing or redundancy, we must pay attention in the definition of the Avid target in IP Director. A good practice is to divide the IP Director stations to specific Transfer Manager Servers with a backup target in case the main Transfer manager is down.

Important Notice : we must use Xfile v1.12.01+ in order to refer to the Avid HostName defined in the XML and not the default name defined in Xfile configuration. This bug was found in Xfile v1.11.02 and solved in v1.12.01 !

12 WORKING WITH AVID MEDIA MANAGER (WG 4)

Avid Media Manager is related to Avid Unity WG 4.

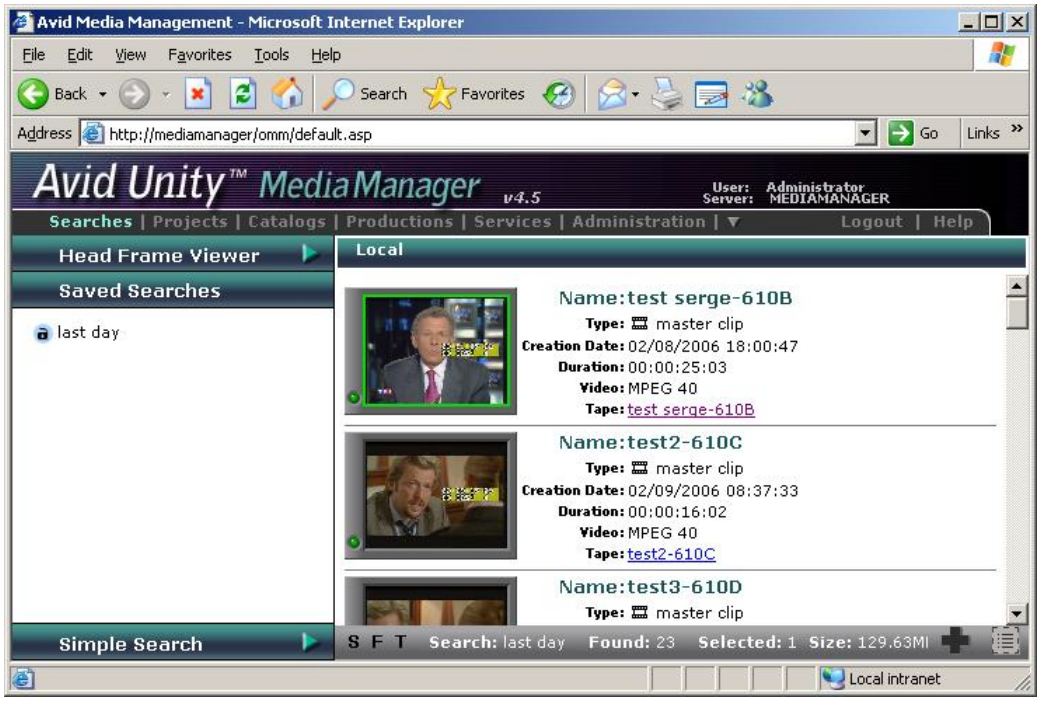
It allows to easily manage Avid Unity Content thanks to a powerfull web browser.

By launching Internet Explorer with the Media Manager URL, you can manage and monitor the content stored on an Unity system from any remote station : Transfer Manager, Media Composer NLE, Xfile, etc.

Please refer to Media Manager User's manual for detailed procedure.

12.1 Clips Search and Import to a bin

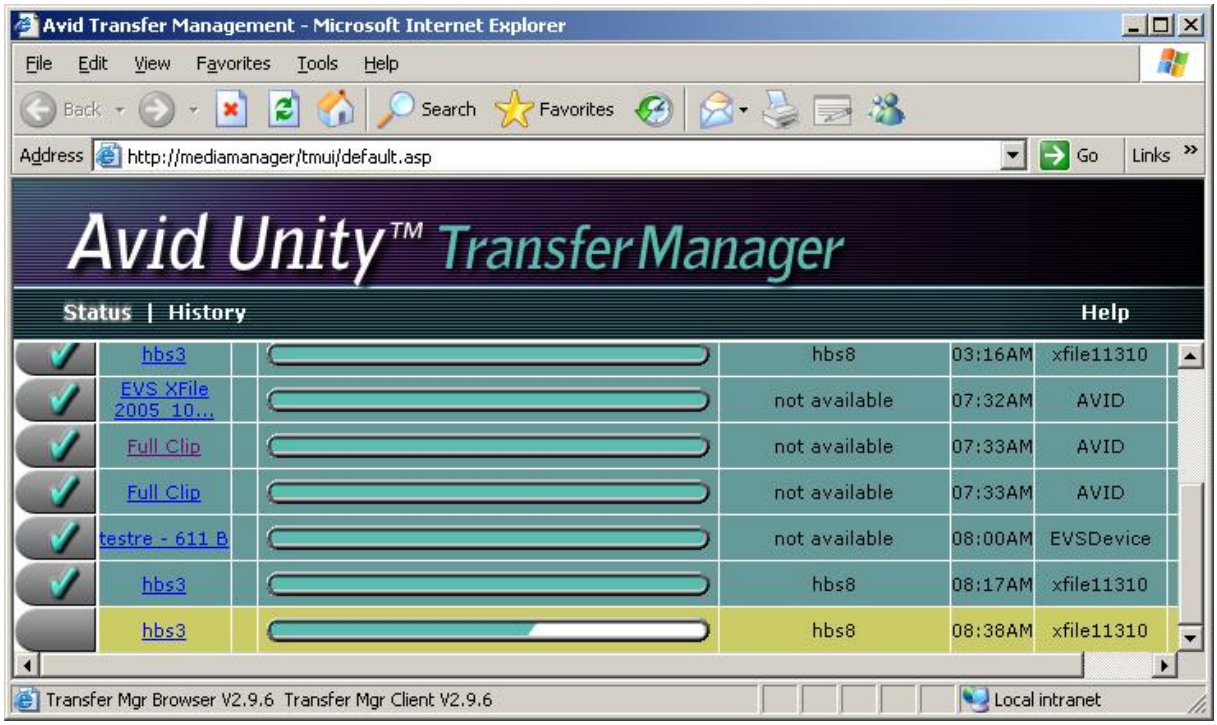
- Search a list of clip by defining a search criterion
- Right-click on a clip to display its attribute. "Expand" button allows for showing all the information related to this clip in Media Manager
- From Media Composer station, drag & drop the selected clip into the bin



12.2 Transfer Manager

In the Media Manager browser, select “Service” to launch a Transfer Manager Status Internet Explorer window. This monitors provides :

- Status of the transfer with a progress bar
- Logs of the transfer when completed (transfer rate – some bugs!, transfer LManager server, etc.)


Avid Transfer Management - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://mediamanager/tmui/default.asp
Go Links
Avid Unity™ TransferManager
Status | History
Help
hbs3 hbs8 03:16AM xfile11310
EVS XFile 2005_10... not available 07:32AM AVID
Full Clip not available 07:33AM AVID
Full Clip not available 07:33AM AVID
testre - 611 B not available 08:00AM EVSDevice
hbs3 hbs8 08:17AM xfile11310
hbs3 hbs8 08:38AM xfile11310
Transfer Mgr Browser V2.9.6 Transfer Mgr Client V2.9.6
Local intranet

13 WORKING WITH AVID INTERPLAY

Avid Interplay is the new MAM developed by Avid. It replaces the former Avid WG 4 and its related applications like Media Manager.

Avid Interplay is composed of a suite of servers and client applications.

Servers :

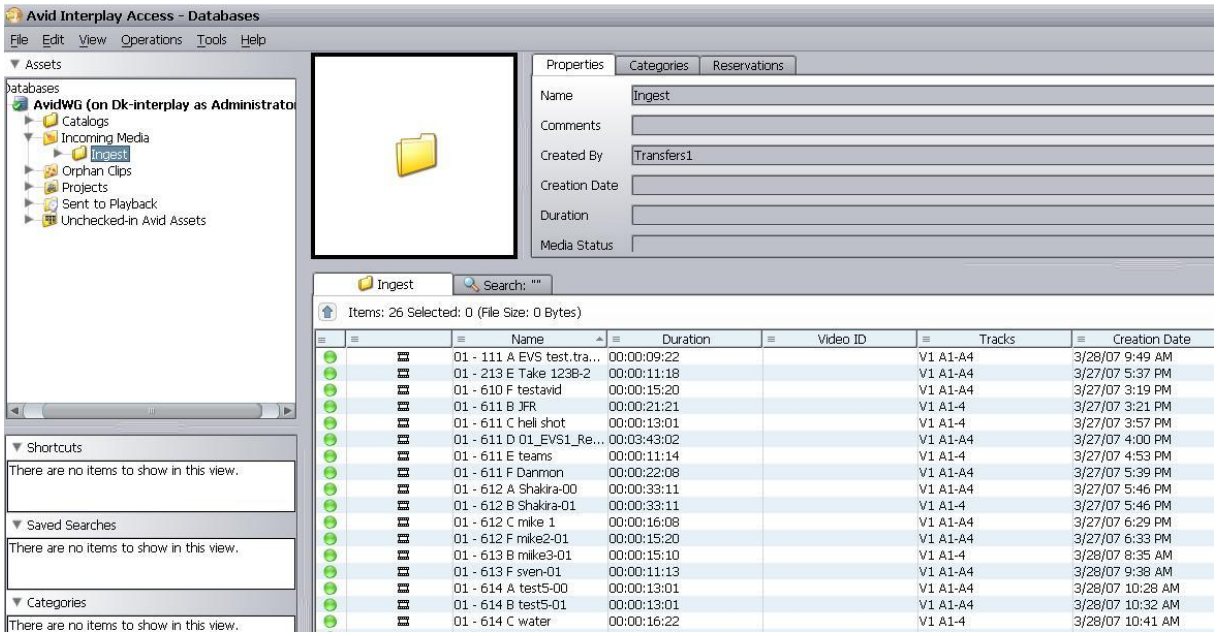
- **Avid Interplay Engine** : The Avid Interplay Engine is the power center of an Interplay real-time nonlinear production environment. It combines an advanced production asset database with workflow management software for instant access to any type of production asset. Built-in project management features enable everyone to perform at peak efficiency, with moment-by-moment status views for managers.
- **Avid Transfer Engine Server** : Ingest media, transfer media between workgroups, or send finished sequences to a playback device while Interplay keeps track of everything. This is the same application as the Avid Transfer Manager server used in WG 4.

Client Applications :

- **Avid Interplay Access** : The Avid Interplay Access asset management client is a direct pipeline into the Interplay media database. Team members can easily search, navigate and organize assets; add or modify media objects such as master clips, sequences, and effects; work with graphics files; and store, track, and modify scripts, spreadsheets, or other project-related files and their version histories—all in their native applications
- **Avid Interplay Assist** : Assistants and interns can review and log video, select shots, and add markers with comments that are automatically visible to producers and editors
- **Avid Interplay Access window in Media Composer :** the same feature provided by Avid Interplay Access but directly integrated into the Media Composer editing application.
- **Avid Transfer Engine Client :** Client related to the Avid Transfer Engine server
- **Avid Interplay Transfer Status :** Tool to monitor the transfer status of Transfer Engine Server

Those applications are Windows based applications to be installed on any Windows client workstations connected to Interplay. There is no Web interface as with Media Manager in WG 4.

13.1 Avid Interplay Access


Avid Interplay Access - Databases
File Edit View Operations Tools Help
Assets
Databases
AvidWG (on Dk-interplay as Administrator
Catalogs
Incoming Media
Ingest
Orphan Clips
Projects
Sent to Playback
Unchecked-in Avid Assets
Shortcuts
There are no items to show in this view.
Saved Searches
There are no items to show in this view.
Categories
There are no items to show in this view.
Properties
Categories
Reservations
Name
Ingest
Comments
Created By
Transfers1
Creation Date
Duration
Media Status
Ingest
Search: ""
Items: 26 Selected: 0 (File Size: 0 Bytes)
Name
Duration
Video ID
Tracks
Creation Date
01 - 111 A EVS test.tra... 00:00:09:22 V1 A1-A4 3/28/07 9:49 AM
01 - 213 E Take 123B-2 00:00:11:18 V1 A1-A4 3/27/07 5:37 PM
01 - 610 F testavid 00:00:15:20 V1 A1-A4 3/27/07 3:19 PM
01 - 611 B JFR 00:00:21:21 V1 A1-4 3/27/07 3:21 PM
01 - 611 C heli shot 00:00:13:01 V1 A1-4 3/27/07 3:57 PM
01 - 611 D 01_EVS1_Re... 00:03:43:02 V1 A1-A4 3/27/07 4:00 PM
01 - 611 E teams 00:00:11:14 V1 A1-4 3/27/07 4:53 PM
01 - 611 F Danmon 00:00:22:08 V1 A1-A4 3/27/07 5:39 PM
01 - 612 A Shakira-00 00:00:33:11 V1 A1-A4 3/27/07 5:46 PM
01 - 612 B Shakira-01 00:00:33:11 V1 A1-4 3/27/07 5:46 PM
01 - 612 C mike 1 00:00:16:08 V1 A1-A4 3/27/07 6:29 PM
01 - 612 F mike2-01 00:00:15:20 V1 A1-A4 3/27/07 6:33 PM
01 - 613 B mike3-01 00:00:15:10 V1 A1-4 3/28/07 8:35 AM
01 - 613 F sven-01 00:00:11:13 V1 A1-A4 3/28/07 9:38 AM
01 - 614 A test5-00 00:00:13:01 V1 A1-A4 3/28/07 10:28 AM
01 - 614 B test5-01 00:00:13:01 V1 A1-A4 3/28/07 10:32 AM
01 - 614 C water 00:00:16:22 V1 A1-4 3/28/07 10:41 AM

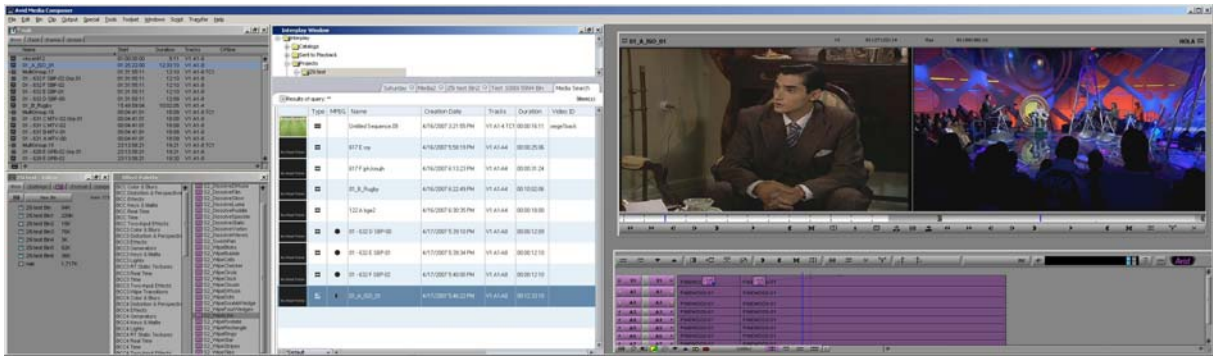
The Avid Interplay Access asset management client is a direct pipeline into the Interplay media database.

This client application can be installed on any workstation connected via a network to the Interplay Engine.

Installed on an IP Director workstation, the EVS operator can easily search, check, and navigate into assets.

Installed on a Media Composer, the Avid Editor can search, check, and navigate into assets, but also drag & drop the assets into its bin or in the timeline to start editing.

13.2 Avid Interplay Access Window in Media Composer



Avid Interplay Access window can be launched from the Media Composer menu.

The Avid Editor can search, check, and navigate into assets, but also drag & drop the assets into its bin or in the timeline to start editing.

Avid does not recommend to launch this Access window in Media Composer at the same time as Interplay Access client or Interplay Assist applications to avoid any conflict to access the database.

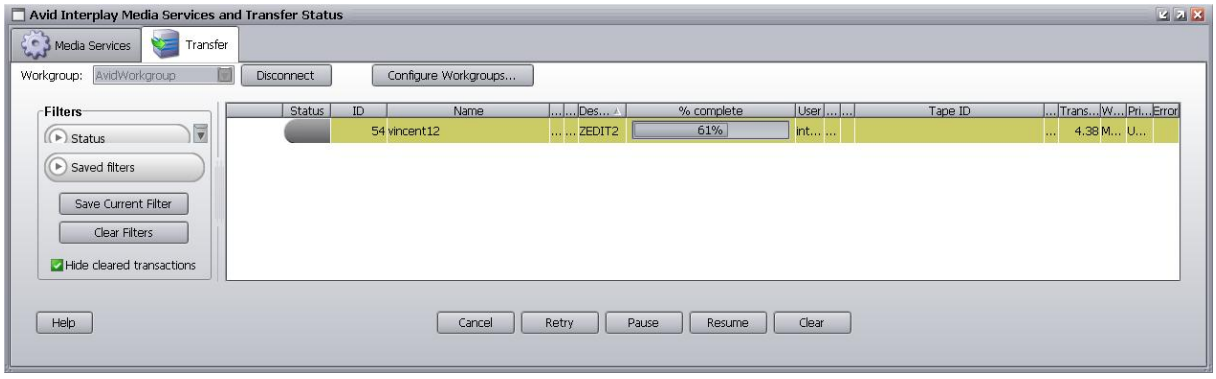
13.3 Avid Interplay Assist

The optional Avid Interplay Assist desktop video tool is a cost-effective way to review and log video, select shots, and add locators and comments using ordinary desktops and laptops on the network.

As Interplay Access, this is an application client that can be installed on any workstation. On an IP Director workstation, Interplay Assist can be used to search, check and preview content on Avid storage.

Note : you need a dongle with appropriate license rights to run this application.

13.4 Avid Interplay Transfer Status



Avid Interplay Media Services and Transfer Status is a tool that can be installed on any workstation connected to Interplay Engine media database.

Running on an IP Director workstation, this tool allows for monitoring the transfer status thanks to its progress bar and check the completeness or failure of the transfer.

14 ACRONYMS

- AAF : Advanced Authoring Format
- IMX D10 : MPEG-2 I-only video format developed by Sony.
- MCA : Avid Media Composer Adrenaline HD
- MM : Avid Media Manager
- Mob : Abstract class for content. Like a container with information about the content.
- OMF : Open Media Framework. Avid legacy file format in Production.
- NLE : Non Linear Editing (system)
- MXF : Material Exchange Format
- TM : Avid Transfer Manager